The Builder.

No. CXVII.

SATURDAY, MAY 3, 1845.

SOME difference of opinion has existed relative to a requirement of the Metropolitan Buildings Act with regard to the construction of chimneys. Schedule F provides, that every chimney and chimney-stack, except angle chimneys, "must be built from the foundation to the top thereof, without any corbelling over, whereby any upper part of the brickwork of such chimney or chimney-stack shall overhang any lower part of the brickwork on the front thereof."

Many of the district surveyors considered that this interdicted *all corbelling whatsoever* in chimney-stacks, and that a chimney-breast in an upper room could not be made *wider* than the breast below, any more than it could be made to project further from the face of the wall.

The referees have now made an award which settles the question. A joint requisition was sent by the owner and the district surveyor with regard to a third-rate dwelling-house now building in Regent's-park-terrace. It stated, "That doubts exist as to the propriety of allowing jaumbs and flues to project from party-walls upon strong stone or iron corbels bearing partly upon the jaumbs and chimney-breast underneath, in order that the chimneys of the third stories (the one-pair floor) may be placed in the centre of the rooms, there being a difference in the depth of such rooms and the rooms of the story below." According to a plan and elevation of the chimney-breasts which accompanied the requisition, one of the breasts was required to extend in width twelve or fourteen inches beyond the breast below it. The referees determined that the chimneys in the third and fourth stories (one-pair and two-pair floors), and in the front room of the fifth story, as shewn in the elevation, might either "be gathered over in the brickwork, or be set over upon sufficient iron or stone bearers in the direction of the length of the wall to which the breast is attached."

We apprehend, although not needed in the particular case laid before the referees, that the breast in the second story of a building (ground-floor) may be gathered or set over in like manner *in the direction of the length of the wall*, as the clause in Schedule F, already quoted, simply interdicts corbelling, "whereby any upper part of the brickwork of such chimney or chimney-stack shall overhang any lower part of the brickwork *on the front thereof*."

The same Schedule, in continuation, moreover, provides for corbelling over not more than nine inches from the front of the wall or stack to which the chimney shall adjoin, in certain situations: that is to say, above the ceiling of the third story (the one-pair floor, ordinarily), in buildings of the first-rate and extra first-rate; and above the ceiling of the second story (the ground-floor), in buildings of the second and third rates.

The question, What constitutes the *bonâ fide commencement* of a building? still occupies, occasionally, the attention of the referees. The following are the heads of two awards on the subject recently made:—

The first relates to six third-rate houses now building for Mr. Stewart on the west side of Norland-road, Hammersmith. The district surveyor stopped the works, on the ground that the walls were insufficient in thickness, and the footings insufficient in height. The owner contended that the surveyor had nothing to do with them, as they were commenced before the 1st of January last, and called upon the referees to direct the surveyor to withdraw his notice. The surveyor stated that the houses were commenced hastily, during the latter part of December last, and were carried up four feet in height in an unworkmanlike manner, and were left exposed to the weather without any drain, so that the work had become quite ruinous; that portions had fallen, and great part of the remainder had been pulled down. He said it was not a *bonâ fide* commencement because the buildings appeared to be essentially different from those first projected, of better character, and were constructed in part of another material: further, that if the referees *should* consider it a *bonâ fide* commencement,—the nature of the works now in progress, comprising "the rebuilding, enlarging, and altering the same," brought them under the control of the Act. The works referred to he described as, "Generally rebuilding the external walls from the footings and facing same in part with stone ashlaring: setting back the front wall to the centre house 4 inches, and laying new footing to part: increasing all the party-walls and their footings one-fourth in thickness: removing the additional buildings (which had been raised same height as the rest) in the rear of the two end houses: taking away the chimney-stacks and their footings from the external walls of the two end houses, and building two new chimneys with the party walls of the same: the two end houses are also to have an additional story, and the walls to be carried up doubtless, of an increased thickness."

The owner admitted that a considerable portion of the work, being injured by the weather, had been taken down.

The referees decided, that as the houses were duly commenced before the 1st of January, "and are now being carried on mainly in accordance with the same commencement, so as to evidence that the same was a *bonâ fide* commencement, the alterations stated are not such as to bring the said houses within the operation of the provisions of the said Act so far as relates to the original building of the said houses."

As it was a case of "reasonable doubt," they awarded that the expenses (3*l.* 9*s.* 2*d.*) should be paid by the parties in equal moieties.

The other case was in the Paddington district. The owner gave notice to the surveyor, November 27, 1844, of his intention to erect two second-rate dwelling-houses. He had previously prepared a concrete foundation, and ultimately completed the footings before the 1st of January last. The surveyor taking a particular view of a letter sent by the referees to Mr. Allen, of Rotherhithe, in January (see BUILDER, p. 37, *ante*), concluded that footings only did not constitute *commencement*, and called on the owner to give a fresh notice. The owner, it should be said, had contracted with a bricklayer for the erection of the houses before he gave the first notice: and the surveyor did not doubt his "good faith."

The referees decided that as the footings "were completely formed and executed in a regular and workman like manner, such buildings must be deemed to have been commenced before the 1st day of January, 1845, and to be 'already built' buildings within the meaning of the said Act, and not within the operation of the provisions thereof, so far as they relate to the original building of such buildings."

It was awarded that the expenses (3*l.* 2*s.* 4*d.*) should be paid by the parties in equal moieties.

In reply to the inquiry of some correspondents, whether or not projections from external walls formed of timber and covered externally with incombustible materials would be conformable to the Act, we can mention that the referees have decided in the negative, in the case of a water-closet projecting from the back wall of a house in Dover-street, Piccadilly. The materials proposed to be used and declared inefficient,—were, timber framing and a covering of galvanized iron.

INSTITUTE OF BRITISH ARCHITECTS.

ON Monday, the 28th ult., a meeting of the Institute was held at their rooms in Grosvenor-street, Mr. H. E. Kendall in the chair.

Amongst the donations announced, were designs for churches and parsonage houses, published by the Prussian government, a work on the Greek Theatre, by Herr Strack, and ten guineas from Mr. Donaldson towards the library fund.

Mr. Fowler, who was the bearer of the German works, made some remarks on the buildings in progress in Berlin. Amongst the most important was an addition to the National Museum, whereof the construction was peculiar. The building is fire-proof, and displays a union of great lightness and great strength. In digging for the foundation they reached a stratum of infusorial earth, and this was made into cones and pots, with which to form the ceilings. The modern Gothic at Berlin he considered bad: in all other styles the buildings there were very satisfactory. The munificence of the government contrasted strongly with the parsimony exhibited in England.

Mr. James Thompson read a paper on the hagioscope and other parts of the chancel of Alderton Church, ten or twelve miles from Malmsbury, Wilts; but as we shall probably print the paper entire, we refrain from any notice of it here. A conversation on the uses of hagioscopes, or squints, took place, wherein Messrs. Scoles, Richardson, Godwin, and others joined.

Mr. F. J. Francis then laid before the meeting some remarks on encaustic tiles; and, after tracing the history of their manufacture in the East, Greece, Italy, and our own country, commented on symbolism, and found fault very properly with some of the absurdities in Durandus.

Earl de Grey, the president, has invited the members to a conversazione on Friday, the 9th inst. The council will have the honour of dining with his lordship previously.

CAMBRIDGE CAMDEN SOCIETY.—Sir William Follett and Professor Starkie have given an opinion in reply to a case submitted to them, that the dissolution of the Society cannot be effected except by the unanimous and expressed assent of *all the members!* As this is not likely to be obtained, the committee will be prepared to submit resolutions at the anniversary meeting on the 8th inst., to enable the society "to continue to subsist in the spirit of its original constitution, and consistently with duty, usefulness, and honour." Blank forms have been sent to all the members in order to obtain their opinion, but it seems quite certain that dissolution will not take place.

ECCLESIASTICAL ARCHITECTURE.

The character of periodical reviews is at this time very different from what it was originally, when they did simply what they professed to do, namely, gave you a notion of the books named at the head of the article, and their own opinion thereon. You now find, in addition sometimes to this, and sometimes indeed altogether without it, the reviewer's own views on the *subject* of the works named, so that they present, in fact, a series of essays on the various topics successively brought before the public by writers. Thus in the present number of *The Quarterly*, "Vacher's Parliamentary Pocket-book" introduces a paper on Whig Tactics; "The Crescent and the Cross" a disquisition on the results of French ambition in the Levant; and the beautiful works of Mr. Gally Knight and the Chevalier Bunsen, a valuable and interesting essay, seventy pages long, on ecclesiastical architecture, more especially as regards plan.

Such of our readers as may not be able to see the Review in question will be glad to find a portion of this latter article in our pages; to those who *may* be able, it will serve as an inducement to obtain the whole.

The writer thus introduces his subject:—

"Your Jonathan Oldbuck, your staunch antiquary of the genuine plodding Gough and Stukeley school, who values architecture historically, and merely historically, escapes innumerable distresses by which Sir Visto would be crazed. He considers every ancient building as an ancient chronicle: Ordericus Vitalis in Caen stone, Gervasius Dorobernensis in Purbeck marble. He reads his tome for the instruction thereby imparted; he delights in it all. The inelegance of the composition offends him not, neither does he despise the rudeness or coarseness of the illuminations. Continued by successive annalists, he is untroubled by the want of uniformity in style. Each successive generation has added its chapter, its page, its paragraph, its line: speaking words from the soul of those whose bodies are silent in the grave. Though the handwriting may change, and the shape of the letters vary, and the method of narration alter, still your chronicle, like the community to which it belonged, forms one continuous whole. You, if you imbibe Oldbuck's spirit, read it on from year to year, from reign to reign, from century to century, through Anglo-Saxon and cloister-Latin, and cloister-Latin and Norman-French, and Norman-French and Chaucerian-English, as one authentic volume. You cannot bear that the smallest portion should be expunged, even for the purpose of being supplied by the most clever conjectural emendation. Still less would you wish that some ingenious popular literateur, acting abbot or prior, were to suppress the original, and recompose the whole in affected archaisms, so as to make the story look as he fancies it might have done, if compiled in the twelfth century. 'L'abito non fa il monaco;' he will not gain Anselm's sanctity by arraying himself in Anselm's cowl.

'Is it not a great blemish, Mr. Oldbuck,' says Sir Visto, 'that the front of our noble Minster should exhibit the deformity of unequal towers; the northern, rude, clumsy Norman, whose stumpy bulk contrasts so disagreeably with the delicate proportions of its southern companion?'

'By no means, Sir Visto; the rude, clumsy, northern tower is a certificated work of the times of the Conquest. It is coeval with Archbishop Lanfranc. The tower constitutes one of the most authentic pages in our architectural history; if you tear the page out, the facts it tells you are lost.'

'Surely that perpendicular tracery, blocking up the circular arches of the solemn transept windows, should be removed, and the composition restored to its primitive simplicity?'

'You are quite mistaken. In its primitive state the transept was not simple: every capital and moulding being rich in gold and colour. By letting in more light, the blanched walls would only look more cold and crude, and at the same time you deprive the building of the instructive lessons this portion imparts; for I, Sir Visto, always view the material church as an emblem of the spiritual church, and the perpendicular tracery is to my mind a memorial of the era of Chicheley and Stafford, and Gerson and the Council of Constance, when so many changes were fermenting in Christendom. Were I reading to the collegers here, I should make them attend to such architectural features, as a branch of technical memory.'

'Well, Monkbarns, but what should be done with that diminutive gable; the debased Gothic of the Elizabethan era? Would you not restore the cathedral to its former lofty proportions?'

'By no means, Sir Visto; don't meddle: the walls have been so weakened by the demolition of the refectory and cloister which once adjoined them, that they could not bear their pristine altitude. You would ruin the building by such injudicious and cruel kindness. The whole pitch of the roof has been lowered to suit our modern mode of carpentry, and the choir could not now carry the beams according to their ancient elevation. The *king-post* and the *queen-post*, so essential to all such high trussing, have been very materially shortened by the alterations begun in the time of William and Mary. If you attempted to raise the cross-crowned pinnacle to the standard of William of Wykeham, it would tumble down.'

'Well, but Mr. Oldbuck, surely *you* will not plead for those misshapen porches and doorways, with heavy arches and contorted pillars, introduced by the masons of the age of Laud?'

'I do. Uncouth as they may be, they possess a decided ecclesiastical character: they are in keeping with the cathedral chaunt, They are more than mere ornaments; although both you and the utilitarian would strangely coalesce—so constantly do extremes meet—in casting them off. Our poor dear old church has been so hacked about, that Laud's additions have become incorporated in the original work. Cut them away, you will topple the whole edifice upon your head.'

Thus are the feelings of our antiquary displayed. There is no one vestige or memorial of past times, which he does not consider as appealing to the heart. The rays which, dimly discerned in the dark niche, beneath the battered canopy, surrounded the head of St. Erasmus' demolished statue, remind him of the error of the worship, but also of the indecent, nay sacrilegious violence with which it was removed. Refusing to replace the statue, he will not efface the traces of its existence. He seeks not to blot out the St. Christopher peering through the whitewash, the token of the simple faith of past ages, yet he abstains from restoring a portraiture which would be a mockery in our own.

The lead-work in the windows, describing the void outline of the figure which has been dashed out by the despoiler; the head in blank, and the hands in blank, and the long robe in blank, and the feet in blank, at the bottom of the blank by which that long robe is indicated, the ideal, as it were, of form, reproduce in his mind a far more true conception of the building in its glory, because they tell of the calamities it has sustained, than as if the absent stained glass had been replaced by the most glowing vitrifications of Willement or Wailes.

The sepulchral recess is closed by the elaborate trellise, quaintly knotted and contorted, rusty and broken, half hiding the tomb behind. Rusty and broken as the iron may be, Oldbuck advises that it should be let alone; he will not have the enclosure repaired, for with him, mending and marring are synonymous terms, nor will he clear it away for the purpose of giving a better view of the monument: he values the effect of mystery; and though he would not brighten up the curious workmanship of the old craftsmen of St. Eloi, he knows that if it were removed it would be sold in 'naval-store' shop for two-pence the pound.

That reredoss, erected during the short reign of Mary, may be inelegant, and inconsistent with the decorated tracery and the graceful foliage of the battered screen; but, executed in *graffito*, the drawing and hatching produced by scratching off the upper coat, so as to shew the black ground below, it is a valuable memorial of the short sunshine which gleamed upon 'the ancient worship,' as well as evidencing the spreading influence of ultra-montane taste. 'And if the reredoss be taken down,' says Oldbuck, 'I know that to the brokers it will wend its way, and our only specimen remaining of that species of art will be irrecoverably lost.'*

The heavy memorial of the age of our first Stuart, the knight in his stiff armour, the lady in her stiffer ruff and fardingale, block up a portion of the chancel and obscure the ancient Sedilia; but the knight was a benefactor to the poor: he founded the decayed hospital: perhaps the sight of his effigy may yet do some good, as a reproach to his posterity; if you demolish the incumbrance, as you call it, your Sedilia will still continue as unfilled as Banquo's chair.

Our antiquary will not relay the footworn pavements, where the sunken flag-stones mark the once frequent resort of the pilgrims along the aisle, nor, for the sake of trim neatness, mend and replace the altar-steps hollowed by the knees of the worshippers now gathered to their rest. 'Nay,' says Oldbuck, 'I reverence even the ponderous, robust, ample brown woodwork of the choir, with the hurlyburly festoons, coveys of merry plump cherubs, mitres which would give a headache to a wig block, croziers fit to fell a bull, and full-bottomed Corinthian capitals; for they do so put me in mind of the days of good Queen Anne, "Convocation," High Church and Dr. Sacheverell.' So Jonathan Oldbuck ponders and reasons, finding sermons in every stone, and deriving pleasure, and therefore profit, from every token of the successive generations who have worshipped within the consecrated walls.

Ill-judged was the allegory which placed the statues of painting, sculpture, and architecture as the mourners round the tomb of Michael Angelo. We do not pay due honour to Architecture if we consider her as the sister, and therefore the equal, of the mere imitative arts: she is their queen. We want a term to designate the intellectual rank of architecture, so closely connected with the imagination that we can scarcely term it a science, so entirely practical and subservient to our needs, that we can scarcely reckon it as one of the æsthetic arts. And yet the arts must all be coerced into the architect's service. Architecture, as a branch of human wisdom, constitutes a genus of its own. Sculpture and painting are entirely founded upon the imitation of nature, whereas the basis of architecture is utility—utility in every sense, from the lowest to the highest, whilst it is wholly conventional in outward arrangements and forms. Architecture may borrow many a principle from nature; but she consults nature for *lessons*, and not for *models*; and let us here hearken to our friend Mr. Cockerell, and listen to his exposition of this principle, in a passage as remarkable for its acuteness as its truth.

'Sir C. Wren reflected that the hollow spire which he had seen or built in so many varieties was, after all, but an infirm structure; and he sought that model which should enable him to impart to it the utmost solidity and duration. Simple was the original from which he adopted his idea. He found that the delicate shell called turretella, though extremely long, and liable to fracture from its base to its apex, by the action of the water amidst the rocks, was rendered impregnable by the central column, or newel, round which the spiral turned. Therefore, in his spire of St. Bride's he establishes the columella in the centre, round which he forms a spiral staircase to the top, issuing on stages of arched apertures; thus giving us (if not the most beautiful) certainly the most remarkable and enduring spire hitherto erected.

'When Brunelleschi was charged with the erection of the dome of Sta. Maria, at Florence, of nearly equal diameter with that of the

* N.B.—The iron-work of the tombs of Queen Eleanor and Henry II. in the Abbey, having been torn down, *was* sold as old metal in the Almonry for two-pence a pound. The altar-screen presented by Queen Mary to the cathedral of Canterbury, having been ejected as rubbish (when Lanfranc's tower was demolished), the back panels, ornamented as above described, and in perfect preservation, were seen by us exposed for sale at a broker's in St. Martin's-lane. A provincial paper announces that 'Goverment intend to completely restore the tombs of Edward the Black Prince and Henry IV. in Canterbury Cathedral,' that is to say, to *destroy* them, and substitute nice bran new ones in their stead—for let words be fairly understood, no tomb or building can be *restored*, unless by previous destruction—witness the 'Ladye Chapel' at St. Mary Overie, Norwich Castle, &c., &c., &c. The Tower of London is to be 'restored' to its 'primitive Norman aspect,' for which purpose the Board of Ordnance intend to demolish the only *genuine specimens* of old English timber buildings (the warders' houses) now remaining in London. *Repair, preserve, uphold* every building and every fragment—*demolish nothing*; but never listen to the siren voice of the *restorer*.

Pantheon, but at more than twice its height from the pavement, upon a base raised on piers, and by no means of the strength and cohesion of the original model, the Pantheon, it was apparent that in giving it the same solidity, the weight would be insupportable on such a foundation. How was this object to be accomplished? Brunelleschi reflected that the bones of animals, especially of birds, possessed solidity without weight, by the double crust and hollow within. But above all, he remarked that the dome which completes the architecture of the human form divine was constructed with a double plate, connected by the light and fibrous but firm walls of the hollow cancelli, so that strength and lightness were combined in the utmost degree. Brunelleschi followed this model in his dome of Sta. Maria; and the traveller now ascends to the lantern, between the two crusts or plates forming the inner and the outer Domes.

'Michael Angelo adopted this contrivance in the dome of St. Peter's; and almost all the subsequent domes are upon the same idea.'*

In ornament, architecture must equally appeal to nature, to the graceful leaf, the binding tendril, the spreading herb and flowret bright; but the architect employs them all as elements and in combination. Even as the living body assimilates to itself the food which gives it growth, and the air imparting health and vigour, and above all bears in its countenance the expression of the vivifying mind, so does architecture render all the material objects of which the building is composed, and all the knowledge requisite for their combination, and all their elegance and symmetry, subservient to her own dominion and empire. Hence the magnificent conception of Vitruvius—every branch of human knowledge is needed to constitute the perfect architect: literature, design, geometry, optics, arithmetic, history, philosophy, music, medicine, jurisprudence, astronomy. There may be somewhat of Platonic mysticism in these Vitruvian opinions. Still we always find them cleaving more or less to the great masters of the art. They are founded upon immutable truths. Every structure becomes the living evidence of the knowledge, the manners, the opinions, and the feelings of mankind."

After examining Mr. Gally Knight's works, especially "The Ecclesiastical Architecture of of Italy, from the time of Constantine to the 15th Century," the reviewer pays well-deserved tribute to the industry, ability, and munificence of the author. Mr. Knight's name is inseparably connected with the history of pointed architecture, to the illustration of which his labours have chiefly tended. In his first work "An Architectural Tour in Normandy," he completely controverted the statements of the Norman antiquaries to the effect that pointed architecture was fully developed there in the 11th century.

In the "Architectural Tour in Sicily," his main object was, further to investigate the origin of the pointed style. "From the facts which he collected, he ascertains that as soon as the Normans achieved their conquest, they employed, as Mr. Knight calls upon us to observe, a style hitherto wholly unknown in Europe. The conquest of Sicily was effected six years after the conquest of England—San Giovanni dei Leprosi was built in 1101, by Count Roger, in the time of Rufus. The other examples of the pointed style in Sicily, built by Count Roger's son, the first Norman king, were begun whilst Henry I. was still sitting on the throne of England. All these are in the pointed style of architecture, which gradually prevailed in all the sacred, civil, and domestic architecture of Sicily.

'The buildings, therefore, still existing in Sicily, prove first, that the Normans in Sicily employed the pointed style; secondly, that it was used in that island before it was used on the continent of Europe; and thirdly, that it was borrowed from the Saracens. But the Norman Sicilian style was not Saracenic alone. Saracenic in its arches, it was Roman in its pillars and capitals, Byzantine in its cupolas and mosaics, Norman and Greek in its enrichments—a combination only to be found in Sicily, and natural there, from the mixture of the different nations.'

The fact, that the Sicilian Normans employed the pointed style at a very early period, and the presumption that such style was borrowed by them from the Saracens, being established, the question then is raised as to its mode of transmission, and Mr. Knight concludes by adopting the opinion so often advocated, that the pointed arch, borrowed from Asia by the Crusaders, was by them generally introduced into Europe."

The reviewer afterwards alludes briefly to the not less praiseworthy and important works of his Excellency M. Bunsen, and then proceeds in his own manner to indicate the development of ecclesiastical architecture in Western Christendom from its normal type, the Basilica of the Romans, and to trace the transitions that were made, until the judicial hall expanded into the Gothic glory of Cologne and Milan:—

"We cannot here attempt to investigate the causes destined to produce that alteration in the human intellect, of which the outward token was exhibited in the so-called decline of the fine arts. Symptoms of this altered course of thought were evident before the promulgation of Christianity, and proceeded with increasing rapidity as the new faith became triumphant. The problem of the great change which thus came upon the human mind is very intricate. Art may have lost its ancient elegance, but this mutation was nevertheless the necessary means for the wonderful development afterwards assumed by architecture, in producing a style, which, though not rendering others unchristian, was certainly more than all others congenial to Christian faith. One element, however, cannot escape notice. The antipathy borne by the early Christians to the fine arts, debased by the pollutions of heathen idolatry, can neither be denied nor concealed; and the same causes which prevented the cultivation of the arts ensured the degradation and subversion of their proudest and most splendid monuments. Excluding for the present the consideration of other agencies, the first paragraph in the rise of Christian architecture must narrate the fall of the structures devoted to the superstition, which it was the end of the Gospel to obliterate and destroy.

The heathen temples were doomed to inevitable ruin. Laws had been promulgated by Theodosius for their preservation; conducive to the decoration of the city, they might be perhaps rendered useful for the purposes of civil society. Some may have been thus respited, though not rescued, until the decayed remains crumbled to the ground; they were never respected or honoured by public opinion, and could rarely be adapted to the objects pointed out by the imperial law, without such alterations, as, in most cases, amounted to destruction. Others were accidentally preserved in desolate or secluded situations, in the forest or the marsh, or the mountain-glen, or on the shore, whence the inhabitants have been extirpated or chased away. Such are the columns of Pæstum; the heavens are yet as bright as when the garlands hung down from the ruined architrave; the sea as azure as when the waves were ploughed by the painted prows; the crushed herbs beneath your feet still send up their rich perfume. To the senses the works of art are still as noble, the works of nature as sweet and gay; but the whole scene mourns under the curse inflicted upon scoffing, lascivious, corrupted Hellas. Language, people, race—their very name has disappeared. The wasting pestilence still hovers, and will ever hover, marking the vengeance which has fallen on the deserted shore.

Few *temples* were ever adapted for the purposes of Christian worship: fewest of all in the capital of the Christian world. 'Of the Christian hierarchy,' says Gibbon, 'the bishops of Rome were commonly the most prudent and the least fanatic; nor can any positive charge be opposed to the meritorious act of saving and converting the majestic structure of the Pantheon.' In casting the account of the merits and demerits of the Christian hierarchy, such a pontiff as Gregory the Great would have been ill inclined to accept the encomium. In the *gergo* of Gibbon, 'fanaticism' is piety, and 'prudence' unbelief. The 'meritorious act,' thankful as we may be for the result, was a single item, by no means influencing the general balance of praise or dispraise; it was the solitary performance of Boniface IV.; it was an act from which no consequences resulted. With the exception of the Pantheon, we fail to detect any real example in Rome, of a temple which can be said to owe its *preservation*, in the *proper sense* of the term, to the Christian clergy. They had then no thought of the kind—they took no pleasure in such antiquities. They sought no credit for such care. Antiquaries, with eager zeal, have collected about ten examples, in which this preservation is asserted. Even in the cases which are least dubious, no further merit can be claimed for the hierarchy than the accidental preservation of a portico, a cella, or a wall, an encumbrance which it was troublesome to remove—a fragment which saved some expense, built up, concealed, marred, or deformed by the new erection to which it was unwillingly conjoined.

It could not be otherwise. In the early Christians, any participation in our modern worship of heathen art, would have been false and unnatural. All the opinions, all the habits, all the feelings, all the conscience of the early Christians strove against the preservation of the memorials of heathenism. Neither beauty nor convenience, if they had possessed the latter requisite, would, save in some few special cases, like that of the Pantheon, plead for the preservation of the relics of classical antiquity They considered the idols as accursed. No object which had in anywise been connected with the worship of idols, or could be supposed to have been employed in their service, was to be used without exorcism. Thus, in the ritual of the church of Durham, there is a form of prayer for hallowing the vase found in the Roman encampment, which could not be employed for any Christian use until subjected to such purification. Nor was this belief confined to the rude Northumbrian peasant, or to a barbarous age. Let us place ourselves before the portal of St. Peter's, fresh from the workmen's hands. Four months have been employed in removing the huge obelisk of Sesostris from the ruins of Nero's Circus to the front of the Great Basilica. Eight hundred workmen, toiling at creaking winch and groaning capstan, heave up the mass; whilst the breathless crowd watch the slow rising of the gigantic beam. It stops; when the one cry—'*aqua alle funi*,' which subjects the individual who suggests the happy expedient to the pain of death, enables the maestro to complete his task: amidst the thunder of the cannon, the 'guglia' stands firm and erect upon its basement. But is the work completed?—No: the trophy of the victory of Christianity over heathenism cannot yet be received as such, until all connection with its former slavery to the fiend has been destroyed. In solemn procession, the supreme pontiff exorcises the magnificent work, so long dedicated to the foul superstition of Misraim, and devotes it to the honour of the cross, performing the rites which were deemed to expel the evil spirit. Those who may not share in the belief which dictated these ceremonies, must, nevertheless, respect the sentiments contained in the simple majestic language, commemorating the consecration of the spoils of heathenism to the service of the cross—'Ecce Crux Domini—Christus vincit—Christus regnat—Christus imperat—Christus ab omni malo plebem suam defendat—Vicit Leo de tribu Juda.'

Thus did Pope Sixtus record his triumph. Yet there was a greater triumph felt by the zeal which taught the early Christians to glory in casting down the altars and the high places devoted to sin—deeming—we will not presume to judge whether rightly or wrongly—that such a testimony to the truth was imperatively enjoined upon them. By their deeds they contemned the temporizing policy of the emperors. They sought the actual and visible victory of literally erecting the temple of the Lord upon the ruins of the habitation of the demon. The statues were broken, to be buried in the foundations: hence few sculptures have ever been found at Rome which did not, like the Venus of the Medici, show, by their defacement and fractures, the aversion of which they had been the objects. Amongst the great congregation of the faithful, the distaste, the horrors excited by paganism—its structures, monuments, glories, charms—were unconquerable and paramount. Idols might have been removed, and the building consecrated by the rites, which, according to the primitive belief, would drive away the demon—yet no lustration

* We quote from the report in the *Athenæum*. Why does not Mr. Cockerell give us an authentic edition of his lectures?

could entirely heal the leprosy of the walls. The language of the Virgin Martyr was echoed in every heart—

'Your gods, your temples, brothel-houses rather;
Or wicked actions of the worst of men,
Pursued and practised. Your religious rites!—
Oh! call them rather juggling mysteries,
The baits and nets of hell. . . . .
Your Venus whom you worship was a harlot—
Flora, the foundress of the public stews,
And has for that her sacrifice.
Your Jupiter, a loose adulterer,
Incestuous with his sister. Read but those
That have canonized them. You will find them worse
Than in chaste language I can speak them to you.'

Whatever had been touched by paganism, seemed—and can we say unjustly?—to be reeking with impurity.

Whilst conscientious feelings thus deterred and repelled the early Christians from adopting the heathen temples for the purposes of Christian worship, the same feelings attracted them to holy ground. We shall see hereafter why the temples were wholly unfitted by their mere plans and arrangements for the celebration of the Christian ritual. But, above all, they were destitute of the associations by which devotion was nourished, and faith enhanced. Jove's temple crowned the Capitol: the structures devoted to the false gods shone above the palaces of imperial Rome: but the victories of faith had been won by pain, anguish, suffering, death: the altar was not to be raised amidst the haunts of men; the communion of saints was sought amongst the lone memorials of the departed."

FREEMASONS OF THE CHURCH.

April 29th.—Mr. George Perry, architect, in the chair. The following new members were elected:—Mr. Thomas Longman, Mr. John Brown, Mr. John Harvies, Mr. George Field, and Mr. John Wilks. The meeting came to a resolution that a petition should be presented by the vice-presidents to the two Houses of Parliament in favour of Mr. Ewart's bill for forming museums in large towns, and another in favour of forming a gallery for the preservation of British antiquities.

Mr. G. Aitchison, jun., exhibited a rubbing from a brass of John Knapp, formerly portman or mayor of Ipswich, and others from St. Mary, in the Tower, and St. Clement's. Also a drawing of a font in Waley Church, Essex, a small village church, some few miles from Walton on the Naze. Mr. Backhorne exhibited an ancient vessel discovered adjoining Old London Wall, at the back of Ludgate-hill, on digging for the foundations of some buildings lately erected there.

Mr. William Papineau delivered a second lecture on architectural chemistry. After recapitulating the substance of the former lecture, and dwelling shortly on the principles and laws of chemical attraction and affinity, he proceeded to the enumeration and classification of the elementary bodies, detailing the properties of each and their action and reaction upon each other, and the general laws by which they are divided into classes; and dwelling particularly on those of common occurrence and more nearly connected with the science of architecture.

He regretted that want of time allowed him only to give a cursory view of principles which he feared proved somewhat dry and formal to his hearers, but reminded them of the importance of a knowledge of theory to successful practice, comparing it to the foundation of a building, which, hidden and forgotten by the multitude, was nevertheless of vital importance to the security of the superstructure; the defective construction of the one producing flaws and settlements in the building, the neglect or imperfect acquaintance of the other producing doubt, indecision, and error in practice.

Episcopal Residences.—It appears from a Parliamentary paper delivered this session, that Episcopal residences have been provided in the dioceses of Gloucester and Bristol, Lincoln, and Ripon; in that of Lincoln at a cost of 14,788*l.*; and in that of Ripon at a cost of 14,611*l.* The cost of the Episcopal residence for the Bishop of Gloucester and Bristol cannot be stated, the building not being yet completed.

A NEW SYSTEM OF ARCHITECTURE.

Some time ago Mr. W. V. Pickett offered to impart to the Royal Academy his plan for a new system of architecture, provided they would pay him a certain large sum of money for the secret. The Academy refused the offered confidence, and the secret was tendered on much easier terms to the Institute of Architects. Being declined there also, the author first published an account of it in a book, and then, on the 23rd ultimo, brought his system before the Society of Arts. Not being in a position to give an opinion upon it, we content ourselves, for the present, with laying the author's own views before our readers, in nearly his own words:—

The leading principles upon which this system of architecture is founded, are, the adaptation of the law which governs natural forms, and the development of the peculiar properties of metallic bodies.

The highest order of beauty, united with the largest amount of utility, is universally allowed to be exhibited in the works of nature, especially in organic nature and in human form, and the attainment of the highest order of beauty, in conjunction with the most comprehensive amount of *utility*, is the true end and purpose of art in architecture.

The great peculiarity in natural organic form is, that its outlines are invariably determined by combinations and modifications of *curved lines;* and in the adaptation of this law, in the formation of the primary masses, compartments, and apertures of architecture, a higher order of beauty may unquestionably be attained than is possible to result from combinations of straight lines: and while the important purposes of shelter, comfort, and safety, are equally well attained, the additional *utility* and convenience of infinitely greater *cleanliness* is effectually secured, because the occurrence and junction of right angles, consequent upon all combination of straight lines, invariably occasions the harbour of dirt and insects, which are, with much trouble and difficulty, if, indeed, they ever can be, thoroughly eradicated. Utility unquestionably demands the partial occurrence of straight lines in building, and such are found conducive alike to beauty and utility in the organic constructions of nature. But nature does not inflict upon her creatures the trouble and inconvenience of direct and acute angles; and art, the highest art, in following, as it ever must, her footsteps, would also abstain from the introduction of the inconveniences and inferior beauty resulting from square forms and right angles in the primary arrangements of architecture.

Now, for the embodiment of forms determined by curved lines, and for general applicability to the purposes of architecture, metals are the most efficient and durable in substance, affording indeed greater facility for the production of forms of this description than any wherein the straight line prevails, in consequence of the liability of the latter to warp during the process of cooling, while their extraordinary strength and tenacity gives most ample occasion for the introduction of the whole range of botanical forms in the decorative arrangements of building.

In the architecture in question, the development of the properties of these bodies is proposed to be effected by the introduction of *hollow* walls or other primal masses, composed of scantling or tie-bars covered on either side with cast-iron plates, attached together by pins or rivets passing through each, and secured on the inner side by a nut or screw; while for all decorative features the imitation of the basso-relievo style of execution is abandoned as fitted only to masonry, and that which is transparent and primarily isolated is adopted. Such features are affixed to the walls by means of the necessary instruments for holding the parts together, viz. pins or rivets,—not closely affixed, because many disadvantages in respect to beauty and utility would result from such arrangement, but by a simple extension of the pin held a short distance in advance, whereby the beauty and cleanliness of the structure is most effectually secured; and by the introduction of suitable colour, combined with the natural agency of light, the shadows of these features become projected on to the primal masses, thereby creating an additional and interesting variety in effect altogether impossible of accomplishment in any other architecture.

Again, in obedience to that unerring maxim in architecture, "that real and apparent constructions should assimilate, the development of metallic properties will demand the general disuse of columnar support; because metals possess a power of suspension and capabilities of sustaining from within the walls of edifices, the weight of all such projective features as are required for the utilities of porticos or similar constructions in aid of general effect, without the intervention of any incumbent support of similar description to the column in masonry; and as the general character of the decorative features should be conformable to the nature of the primary constructions, the substitution of suspended features of pendentive character will form another marked distinction of this architecture. The author considers that, by his system, we may attain a higher order of beauty and a combination of effects different from those of any other architecture. We may have structures of greater cleanliness, whether on account of the non-absorbent properties of the material, the nature of the decorative constructions, and the peculiarities in primal form. We may have buildings perfectly fire-proof, and, from the circumstance of a stratum of air passing between the plates of the walls, cooler in summer, and warmer in winter, than any others. We may have them durable to the greatest extent; presenting the utmost facility in erection, and capable of being removed at trifling cost, and without the injury or destruction of their respective parts. We may have an architecture not necessarily demanding the application of metal in its primal parts, but equally with masonic art, employing brick, cement, and other factitious substances in place of its legitimate material,—an architecture adapted to the various requirements of domestic life and of modern society, at once perfectly practicable, and on many occasions more economical than any other; and above all, he contends, we may have that which the world has never yet had, a commercial architecture, opening new and untrodden fields for enterprise of almost every description, and enabling this country to become the great emporium of art throughout the world, by supplying the various nations of it with the productions of architecture.

We reserve to ourselves the right of expressing our own opinion upon this hereafter, should it seem desirable to do so.

NORFOLK CHURCHES.*

FOULSHAM.

We were gratified to notice that those connected with this spacious and handsome edifice have acted as conscious (which too many are not) that "all the comeliness we can give to God's house is *necessary*, if we would have his blessing." It was reduced to a ruinous shell by the calamitous fire which occurred here in 1770; but the devastation has been in degree repaired; we say in degree, because there are yet strong objections to the taste in which this has been effected. How truly has it been observed that "until within a very recent period, purity of design and character in our ecclesiastical buildings seems to have been well nigh banished from the land."†

This church is dedicated to the Holy Innocents, and consists of a chancel, a nave flanked by two aisles, a south porch, and a fine perpendicular tower situate at the west end of the nave; it contains only two bells.

The east window—we begin our survey with the chancel—comprises five lights, the mullions, which throughout the entire range are beaded, simply crossing on the head. The arch, which has labels both within and without, springs internally from jamb-shafts, two on each side, separated by a cavetto moulding, and having the capitals enriched with foliage. On either side appears a trefoiled niche under a decorated ogee canopy, adorned with crockets and a finial; but these are partially blocked by a vulgar painted dossel in the heavy style of the Stuart period. A large double piscina is found under foliated ogee arches, having the space between pierced by a quartrefoil; the orifices have disappeared. The sedilia are very fine; two clustered piers have their bowl-shaped capitals enriched with foliage; from these and their "responds" spring three cinquefoiled

* See Vol. II. p. 629.
† Markland's "Remarks," &c.

drop-arches, canopied by a like number of richly crocketted ogee labels with finials; the whole, inclusive of the piscina, being inserted within a square compartment, having its hollow moulding relieved with roses, and the spandrels carved in decorated tracery. The corbels under the labels exhibit male and female heads in the costume of the sixteenth century. The *benches* of the sedilia are lost, but a chair, with arabesque carving upon it, stands on the north side of the table—by the way a nowise eligible position; the altar rails are heavy and unsightly, the table a good plain oak one.

Over the sedilia occurs a beautiful pointed window of three lights, with fine geometrical tracery in the head, and supplied with label and jamb-shafts, like that over the altar. The chancel has a clerestory tier of windows, four on each side; they are of two foliated ogee headed lights "supermullioned" under depressed Tudor arches; we regret to add that the heads of these, as also of a three-lighted range in the clerestory of the nave, are without one redeeming exception blocked. The pointed chancel arch, which is recessed, chamfered, and beaded, springs from large half-round piers, each flanked by two smaller ones, with a broad cavetto between. The corbels of the original wall-pieces are carved with Lombardicks, having coronets over them. The meagre open roof, of low pitch with tie-beams, &c., was placed there towards the close of the last century.

A chancel seat, we hardly know how correct the designation, an open sitting, has lately been placed longitudinally against the south wall. With examples in two churches, each within an hour's ride, of what such seats ought to be, one is at a loss to account for the utter want of taste so prominently shewn here, for good material (oak) being so wretchedly perverted.

The rood-screen has wholly disappeared, unless indeed a quantity of *voluted* panelling, yet remaining in the vestry and elsewhere, formed portions of it; though on this we are by no means confident. The nave exhibits on each side four plain circular piers with bell-shaped capitals supporting equilateral double-faced pointed arches with chamfered soffits. The bases partake of Norman character, in form a bee-hive flattened at the sides into a square. The belfry-arch rises from large and small half-round piers; the architrave is composed of two sets of mouldings, the one continuous with the cavettos on the jambs, the other (quarter-round and filletted) springing from the encased shafts with plain moulded capitals. The timbers of the roof here are hidden by a coved ceiling, partially relieved at the extremities by scrolls, and at the spring of the arch by a large but inelegant cornice.

The polygonal pulpit, set on a mass of brick-work panelled in cement, with early-English arches, is reached through a portion of the ancient wood staircase. It stands on the south side of the nave, and has a *pendant* in the reading desk opposite. There is little to commend in the style of either, the perked up desk being only in too close keeping with the bad taste of square and high pews, some of them lined and carpetted, which occupy the aisles. The nave is without a central avenue, being crossed by a range of hollow-backed seats—the cheerless portion of such as bear

> "The trace of the sad trinity
> Of want, and pain, and sin."

The pavement is of stone throughout.

The windows in the aisles, each of three trefoiled ogee lights, with vertical tracery inserted under a depressed Tudor arch, have the central divisions supplied with transoms intersecting the head which reaches a higher elevation than the rest. The aisles have modern sloped, or lean-to roofs, ceiled between the timbers. The font, situate at the west end of the nave, somewhat in advance of the belfry-arch, is raised on two low steps forming a spacious octagonal platform. It consists of a circular marble basin placed on a modern stone pedestal, the latter spirally filletted, the other with Ionic flutings under a horizontal dancette band. The rim of the basin, which has not the convenience of a drain, is "returned" with an inverted edge. In Parkin's time there was "a neat font of stone with a modern cover, which opens below, and thereon are the four Evangelists painted." It is impossible to congratulate on the exchange.

The square tower, its outline varied by "franch" or diagonal buttresses at the west end, is divided into four stages by string courses, those under the parapet having grotesque gurgoyles in the centre: it has pinnacles at the angles, crocketted and panelled, with ogee arches. The embrasures of the parapet are in two stages, and are richly carved with quatrefoils, shields, and panels. The belfry windows, of three foliated lights under a pointed arch, are supermullioned; and square-headed windows in the third stage exhibit stone lattice-work of the same character. The west window, of four trefoiled lights, is inserted beneath an equilateral arch with the dripstone returned horizontally—a general feature here. The tracery, with exception of the head being pierced with a quatrefoil, and that the mullions cross each other, runs in vertical lines. The steeple has a newel staircase threading a semi-hexagonal projection at its north-east angle.

The south porch has been converted, by blocking the open archway, into a vestry, lighted by a single ogee-headed window on the western side. The south, or, as by this perversion, vestry door, has its jambs and the architrave above recessed and chamfered with continuous mouldings, the whole being set under a double-headed label rising from corbels, one of them a head in mascled armour. A triangular or gable-headed buttress, on the south side of the chancel, offers the first feature of the kind occurring in our survey.

"In the churchyard is an altar-tomb of stone, about six feet long and three high, and round this an inscription, which, for the antiquity of the letters, order, and disposition of them, has been engraved by the Society of Antiquaries, and is *Rob. art.* COL. LES. GEC. I. LY. HIS. VIF. Each letter has a coronet over it," a peculiarity already noticed in our remarks on the chancel.

C. T.

HUNGERFORD SUSPENSION BRIDGE.

In addition to the account of this work already given (p. 169 *ante*), we append the following valuable particulars taken from a paper on the subject read by Mr. Cowper on the 18th ult., at the Royal Institution.

This bridge consists of four broad chains, viz. two chains, one above the other, on each side of the platform; each chain consists of ten and eleven links alternately, and, near the piers of eleven and twelve. This increased strength is to meet the increased strain which takes place near the piers. The chain of the Menai Bridge is only five links wide, and the chain of the Hammersmith only six links wide; but the great breadth of the Hungerford chain (viz. eleven links, or about two feet), gives them great power to resist the effects of the wind, and thus to prevent vibration.

The two piers are in height	80 feet.
The central span between the piers (being 110 feet wider than the Menai bridge)	676½ ,,
The length between the abutments	1352½ ,,
Deflection of the chain	50 ,,
Length of each link (7 in. wide, 1 in. thick)	24 ,,
Weight of each link	5¼ cwt.
(The connecting pins are 4¾ inches diameter).	
The whole number of links	2600
Their weight	715 tons.
The number of links in the centre span	1280
Their weight	352 ,,
Width of the platform	14 feet
Height above high water at the centre of centre span	32½ ,,
——— near the piers	28½ ,,
(giving a rise of four feet in the centre. This gives additional height for the river traffic, and produces a graceful curve, and prevents any appearance of swagging.)	
The section of the chains at the centre of centre span is	296 sq. in.
——— near the piers	312 ,,

A square inch of iron *breaks* with 27 or 29 tons, but 17½ tons is taken as the *impairing* weight, *i. e.* the weight at which it begins to stretch; we have, therefore, for the weight the bridge will actually bear,—

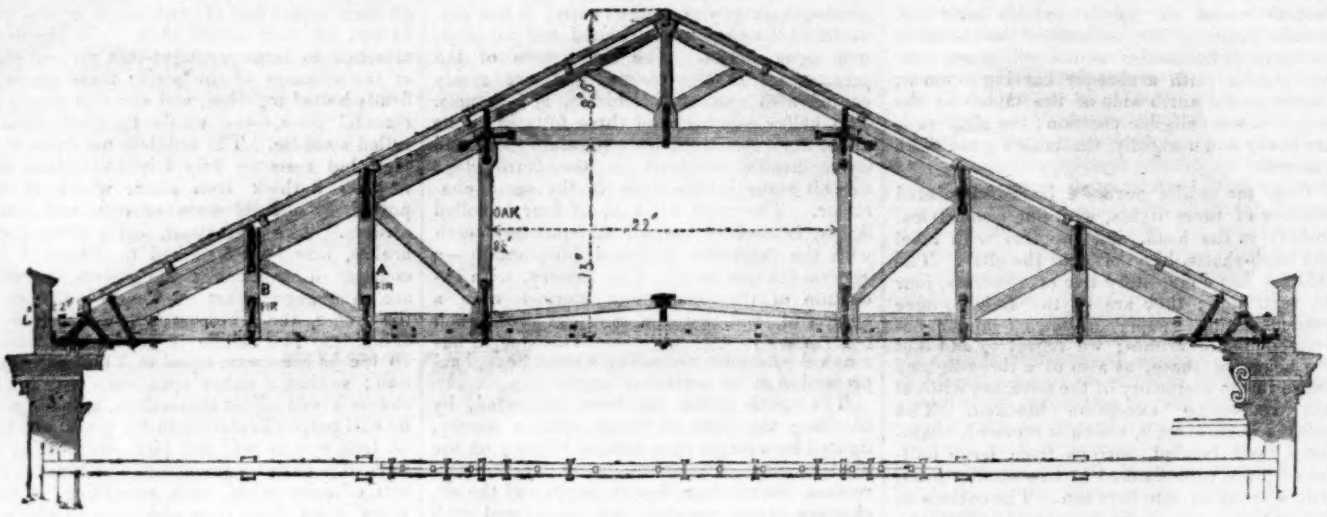
296 × 17½ tons = 5180 tons.
while 296 × 5 tons = 1480 tons.

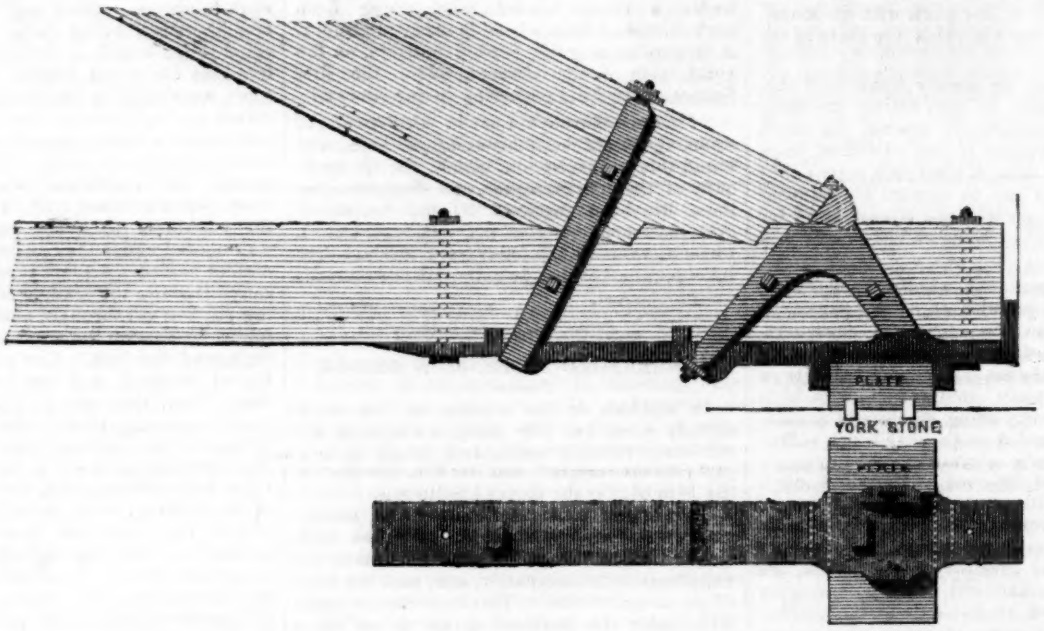
is the greatest load that can be put upon it. This is taking a crowd standing close together to be 100 lb. per square foot. The entire weight of the chain, the platform, and a full load upon it, would make a load of about 1,000 tons on each pier, being about 8¼ tons on each square foot of brick-work, or not quite 1¼ cwt. on each square inch. The chains are attached to large wrought-iron vertical plates at the summits of the piers: these plates are firmly bolted together, and also to a strong horizontal plate,—the whole forming what is called a saddle. The saddle is not fixed to the pier, but rests on fifty friction rollers, these rest on a thick iron plate, which is supported by a solid mass of iron and timber girders. The pier itself, being pierced with arches, may be considered to consist of four columns of brickwork; the girders, therefore, are so arranged, that no weight is thrown on the *arches*, the whole weight resting on the columns. The saddle is capable of moving 18 inches each way, equal to 3 feet entire motion; so that if either span were crowded the chains would adjust themselves, and the strain be still perpendicular upon the piers, and have no tendency to pull the pier over. The method of putting up the chains was thus:—Two sets of *wire* ropes, each consisting of three ropes, were hung from abutment to abutment over the piers, in the exact situation the chains were to occupy,—these *scaffold* ropes, as they may be called, being distant from each other equal to the length of the connecting pin. A few feet above the scaffold ropes, two other ropes were hung in like manner; on these traversed two light boxes, very much resembling a carpenter's bench turned topsy-turvy. These *cradles* as they are called, were connected together, and contained two windlasses, like those over a common well; these cradles held the workmen. A barge containing the links was moored under the cradles; four men in the cradles hauled up a link; and when they had raised it above the scaffold ropes, the connecting pin was put through, and the pin being allowed to rest on the scaffold ropes, of course supported the link. The cradles were then moved forward, and two links joined to the single link, then one joined to the two; the chain consisting, thus, in the first instance, of alternately two and one links. When this two-and-one-link chain was completed, the scaffold ropes were not required, the two-and-one-link chain forming, as it were, a scaffold for the rest of the links; and thus was this bridge erected *without any scaffolding* but these few ropes, and without the slightest impediment to the navigation, or a single accident. The bridge was opened to the public on Thursday, the 1st instant.

FALL OF A VIADUCT AT ASHTON.—One of the most distressing and extensively fatal accidents occurred last Saturday week at Ashton-under-line. The Ashton branch railway, now in progress of formation, and nearly completed, is carried over the river Tame, between Dukinfield and Ashton, by a viaduct of nine arches, and it was this entire viaduct that fell, arch after arch, like a row of nine-pins; precipitating, with the viaduct, between 20 and 30 workmen, who were upon it, chiefly excavators, engaged in filling up the spandrils of the arches with soil and gravel, for the permanent way. As to the cause of the catastrophe, those who are best acquainted with the works, say the arches were very substantial and well-constructed. It is stated that close to the arch which first gave way there is an "eye" of an old coal mine, which has long since been abandoned by the miners, and that some time ago the earth near this "coal-pit eye" was seen to sink, and that it was then stated that the foundations of the arches were unsound. An inquest is now sitting on the bodies of eleven persons who were killed; and it is feared that four more will be added to the number before its conclusion, that number being still missing, and supposed to be under the ruins.

FALL OF AN ANCIENT CHURCH.—On the 14th ultimo, the eastern wall of St. Julian's Church, situate in King-street, Norwich, fell, burying the communion table and one or two pews contiguous thereto. Fortunately no one was personally injured. This sacred edifice, one of the most ancient in the city, consists of a nave and chancel with a round tower.

ROOF OVER THE GREAT ROOM, EXETER HALL.





THE ROOF OVER THE GREAT ROOM AT EXETER HALL.

During the last three months, we have received from several correspondents a request to be furnished with the particulars of the roof which covers the large room at Exeter Hall.

In the annexed engraving Fig. 1 represents one of the trusses on a scale of 12 feet to an inch, and gives the plan of the underside of the tie-beam, shewing the scarf. The width between the plates is 75 feet 10 inches; the width between the walls 76 feet. The height of the roof from the underside of the tie-beam is 21 feet 6 inches. The trusses are placed at alternate intervals of 2 feet 6 inches and 9 feet. The following are the scantlings of the timbers used:—

		in.	in.	
	Tie Beams	14½	by 7½	
	Principals	14	.. 7½	
	Longer Principals	8½	.. 7½	
	Collar Beams	14	.. 7½	
Solid	Queens } out of English oak	8½	.. 7½	} in the
Solid	Kings } of the best quality	6	.. 7½	} Shaft.
	Braces	7½	.. 7½	
	Upper ditto	6	.. 7½	
	Purlins	7½	.. 4	
	Common Rafter	5	.. 2½	
	Pole Plates	12	.. 4	
	Wall Plates	13½	.. 6½	
	Hip	10	.. 2	
	Ridge Piece	8	.. 3½	
	Hollow Queens A	12	.. 4½	
	Ditto B	10	.. 4½	

Figure 2 represents the foot of the truss with the iron-work at large. The strap and abutment piece are of wrought-iron, the remainder, tinted darker, is of cast-iron. We are indebted to Mr. Laurie, clerk of the works at Pentonville Prison, for the drawing from which our engravings were made.

We found no disposition at Exeter Hall to afford the slightest information, and owe no thanks to the officials.

FATAL ACCIDENT AT DERBY.

We mentioned in our last impression that a portion of the arch just erected over the Mill Fleam, in the Morledge, had given way, and caused the death of two persons, and that this was the second fatal accident that had occurred in the erection of the same arch, the first causing the death of six persons.

At the inquest, held last week, on the bodies of Mr. James Sims, the builder, and Edward Harlow, his apprentice, it appeared from the evidence of Mr. Harpur, the architect and surveyor to the corporation of Derby, that the centres of the arch had been improperly removed, and that he had cautioned the deceased Sims, the contractor, not to remove them in the manner he had done. He did not, however, interfere with Sims, as he considered that he had more practical information than himself, and he had a better opinion of his knowledge of building than he had of his own.

Mr. J. H. Stevens, of Derby, architect, was of opinion that the accident might arise from two causes—the extreme weight upon the crown of the two arches, and the pier being too weak to support the superincumbent pressure. He believed Sims to have been perfectly competent to perform the work if he had proper instructions."

The jury returned the following verdict: "Accidental death; but the the jury cannot separate without expressing their strong conviction that had the joint committee of the corporation and the commissioners appointed a competent and efficient engineer to superintend over Mr. Sims during the progress and in the execution of the works, and which, they think, after the warning the first accident had conveyed, they should have done, the accident which has since occurred would not have happened."

ANCIENT CAPITALS FROM THE SOANE MUSUEM.

The extraordinary collection of works of art left by the late Sir John Soane is now open to the public, and will remain so during May and June.* A delightful and instructive morning may be spent there, and we may perhaps before long offer to our readers the notes of a stroll through it, as an inducement to them to examine it for themselves.

The engravings on the opposite page, from sketches by Mr. Richardson, represent some examples from this collection, of a class of antique caps not generally well known. Fig. 1 is from a cast brought from Rome by Mr. Lee, and purchased at his sale by Sir John Soane. The original of figure 2 is not so perfect in *front* as it is shewn by the engraving. The lower leaves, copied from the side, are introduced so that the whole design may be seen.

* On application being made to the curator, Mr. G. Bailey, a ticket is forwarded.

ANCIENT CAPITALS FROM THE SOANE MUSEUM.

Fig. 1.

Fig. 2.

GEOMETRY OF ARCHITECTURE.

An inference from the third proposition of Euclid's elements of geometry supplies a most simple, ready, and useful method for drawing the radiating joints for the stones, &c., of large flat circular arches whose centres are inconvenient, and which are supposed to be inaccessible.

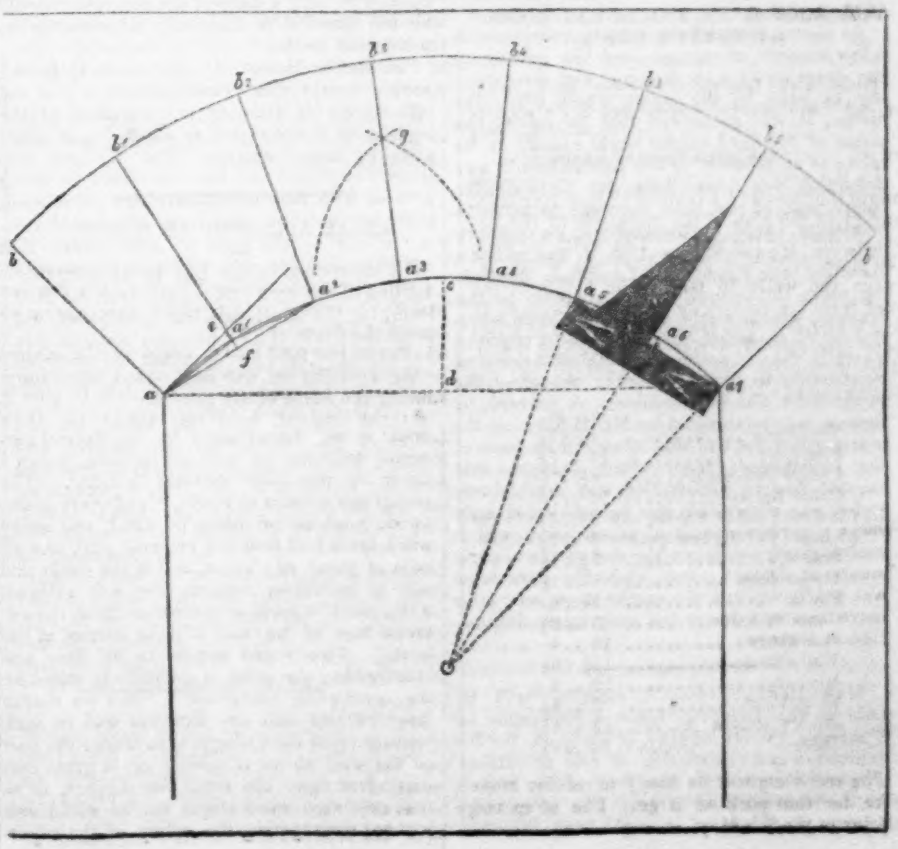
From points on the circumference of a circular arc, it is required to draw lines that shall be perpendicular to it at those points, and that shall pass through the centre of the circle; without reference to the centre, or making use of any constructive lines for the purpose.

Let $a\,c\,a_7$, be a circular arc; $a\,a_7$, the chord of that arc, or the opening; and $d\,c$, the versed sine, or rise of the arch; let a, a_1, a_2, a_3, a_4, a_5, a_6, and a_7, be the points for the joints of a series of arch stones. To draw the joint $a_6\,b_6$: apply a parallel ruler, or straight edge, on the next adjacent points from a_6 (that is, on the chord $a_5\,a_7$), slide a set square against the edge of the ruler until the right-angled edge of the set square coincide with the point a_6, and draw the joint $a_6\,b_6$, which will be perpendicular to the arc at the point of contact a_6, and also to the chord at the point i; and it will also radiate to the centre of the arc. Find the centre o, which may be easily effected by producing the lines $b_5\,a_5$, $b_7\,a_7$, till they meet in o, which is the centre of the arc. Produce $b_6\,a_6$ to o; and since the arc $a_5\,a_7$ is bisected in a_6, and the chord $a_5\,a_7$ in i, $a_6\,a_5 = a_6\,a_7$, and $i\,a_5 = i\,a_7$, and $o\,i$ is common to the two triangles $a_5\,i\,o$, $a_7\,i\,o$; and $a_5\,o = a_7\,o$; therefore the angle $a_5\,i\,o$ = the angle $a_7\,i\,o$ (*see Euclid* 8 *of* 1); consequently, whenever the chord of an arc, or the arc itself, is bisected by a perpendicular, it will radiate to and pass through the centre of the circle. The joints $a_5\,b_5$, $a_4\,b_4$, $a_3\,b_3$, $a_2\,b_2$, and $a_1\,b_1$ may be drawn by the same process, by applying the ruler successively on the next adjacent points as before.

Now, in order to draw the skew-back joints $a\,b$, $a_7\,b_7$, it will be necessary to find tangents to the arc at the points a a_7. From the point a set off $a\,a_1$, $a_1\,a_2$, at any equal distances on the arc, and join $a\,a_2$, $a\,a_1$, $a_1\,a_2$. Then with a as a centre, and radius $a\,a_1$, describe the arc $f\,e$; make $a_1\,e = a_1\,f$, and draw $a\,e$. Then, since inscribed angles, subtended by equal arcs, are equal to one another, therefore the angle $a_1\,a\,a_2$ = the angle $a_1\,a_2\,a$; and the angle $a_1\,a\,e$ = the angle $a_1\,a\,f$, or to the angle $a_1\,a_2\,f$; therefore, $a\,e$ is a tangent at the point of contact a. From the point a draw the skew-back joint $a\,b$ at right angles to $a\,e$; and proceed in the same manner for the skew-back joint $a_7\,b_7$. This problem of drawing a tangent to an arc whose centre is inaccessible, was first proposed and solved in the *Ladies' Diary*.

The applicability of this mode of finding the skew-back joints of circular arches is of manifest utility to plasterers and bricklayers, but more particularly to the latter, when forming the skew-backs of discharging and *counter* arches (*i. e.* arches over lintels, &c.); and were this method adopted and practised, it would prevent unsightly and weak arches from being formed, which too often is the case from a want of understanding the nature of their thrusts and pressures; for the joints of all arches should be perpendicular to the curve of the neutral axis which passes somewhere within the substance of the arch; but if the forces acting against the arch be very great, and the equilibrated curve corresponding to the pressure runs above the extrados or below the intrados, the material of the arch will yield, and very probably it may be thrown down. In reference to the skew-backs in question, it is desirable that their faces should be in the direction of the centre of the arc, in order to distribute and equalize the pressures, and to produce the greatest amount of strength. The true radiation of the skew-back may be obtained mechanically by simply setting off from the point a, on the *core* or centre, any two equal distances $a\,a_1$, $a_1\,a_2$; apply a line or plumb-rule from a to a_2, measure the distance under a_1 to the line, and set that distance above a_1 to e; then apply the line from a to e, and cut the skew-back $a\,b$ square from this line.

But the method of drawing the joints for the stonework of large flat circular arches for bridges, &c.,—and indeed its application in



very many cases may arise in practice,—will also be of much service to architectural and mechanical draughtsmen, as it will tend very materially not only to abridge their time, but will save a vast deal of unnecessary trouble, and obviate the necessity of drawing the joints from the centre of the circle; or, by taking a_3 a_4 as centres, and with a radius greater than half a_3 a_4, describing arcs intersecting in g, and then drawing the joint from a_3 through g, and so on.

JOHN PHILLIPS.

INSTITUTION OF CIVIL ENGINEERS.

APRIL 22nd.—Sir John Rennie, President, in the chair.

The discussion upon the atmospheric railway system was renewed, and continued throughout the evening to the exclusion of every other subject.

The principle of the basis of Mr. Stephenson's calculations, that the maximum uniform or mean velocity was attained, appeared to be conceded; but a question had been raised upon what was termed an inconsistency in the experiments, which was the attainment of a steady height of barometer with an accelerating velocity. In order to subtantiate the view, that a maximum velocity had never been attained, the steady height of the barometer, and the principle therein involved, was disputed, while an acceleration, made up by grouping a number of the velocities registered in the tables, was advanced as an inconsistency, amounting to a proof that the height of the barometer could not have been steady. The fallacy resulting from any arbitrary grouping of these registered velocities, in any of which on error of eight miles per hour might exist, was shewn by a comparative analysis of the grouping. If column No. 4, in the tabulated experiments, was grouped into divisions of five observations in each, an acceleration of 1·60 would be shewn; but if the division be made into groups of four observations in each, a *retardation* of ·8 would result. This clearly shewed that either an acceleration or a retardation might be established from the same figures, depending upon the method of grouping them, which was entirely arbitrary. This test, therefore, of the amount of acceleration was considered nugatory. On the other hand, it was proved from the experiments of Mr. Stephenson and his assistants, corroborated by those of Mr. Bidder, that a perfectly steady height of barometer was maintained, and could be observed with the greatest accuracy, when there was nearly a balance between the power and the resistance, and therefore no forces were in operation to cause an undulation of the mercury.

As to the comparison between starting with a low amount of vacuum, and the getting up the steam under a locomotive, and then starting as soon as the steam would move the piston, it was contended that the raising the steam of the fixed engine ought equally to be taken as an element of the comparison if any deduction was drawn from it. In a similar comparison of the time required to attain a maximum speed by locomotives, on ordinary railways, it was shewn that it was rather a chemical than a mechanical question, depending upon the intensity of combustion in the fire-box, which would be at a minimum when the engine was stationary, and that it required a certain time to produce a sufficient amount of combustion to attain velocity; therefore the comparison was inadmissible. A balance, by figures, was established by Mr. Bidder, of the power given out and that observed by each of the resistances: from which balance that amount due to acceleration was ascertained, and it was shewn that this amount could only cause a certain amount of acceleration, which was all given out before the end of the experiments at Dalkey; and while the barometer was nearly uniform the acceleration was little more than was due to the progressive diminution of leakage.

NEW INVENTIONS.—A meeting will be held at the Islington Literary Institution on Thursday, the 8th of May, at 8 o'clock, for the exhibition and explanation of new inventions. The secretary will be happy to receive models &c. for that purpose if sent free of carriage prior to the 7th May.

THE DIFFICULTIES AND OBSCURITIES OF THE METROPOLITAN BUILDINGS ACT.

SIR,—Having by your courtesy been permitted recently to occupy so large a space in your columns, I had hoped that the remarks hazarded, principally upon points I conceived to be without the operation of the Act, would not have induced remark or comment on the future operation thereof. But feeling two points of difficulty to press very inconveniently as to the course to be adopted in practice, viz., the lack of declaration as to the reading put upon certain clauses by the official referees, and the obscurity of other clauses, where it would be unreasonable to expect either them or the district surveyor to give an intelligible reading thereof, I would suggest what appears a reasonable course to adopt in aid of the steps apparently intended to be taken by the note to your correspondent "Scrutator," in your journal of the 19th instant.

The Act is a public one, and I contend any party has perfect right to read for himself, and so read with a desire to conform to its enactments: I do not believe he would find let or hindrance from any constituted authority. That some men in new districts have offensively, in "litigious and unwise proceedings," exercised their "little brief authority" is quite true. Let them be met with firmness and fair argument; this evil will soon cure itself; and I quite believe that both referees and "the able and right-judging men," of whom you speak as district surveyors, will be very glad to come to a fair and intelligible understanding with their professional brethren, and those interested in the operation of the Act. The course I therefore would suggest is, at a timely moment, let a meeting be called, through the medium of an advertisement in your columns, perhaps aided by a leading article. At such meeting appoint a special committee to receive for a given period all communications: such committee, from the mass of evidence they will receive from parties who conceive themselves aggrieved, and taking up other points of apparent difficulty, viewing the whole with unbiassed minds, would be prepared to request a meeting with the official referees (which I feel satisfied would be accorded), and upon a fair and impartial statement, request them to issue a circular to the district surveyors as to their equitable decision or opinion upon the several points submitted to them *seriatim*. Having already assumed this authority in respect of matters in operation before the 1st of January, for all matters subsequently (being distinctly clothed with large equitable powers, and being the appellant court in case of difference), it would appear not to be probable that any district surveyor would venture to oppose his opinion to such a dictum, and the public would be too thankful to have such an authority as their sheet anchor.

In such a discussion I am fain to think, all parties would gladly avail themselves of the opportunity of drawing the attention of the legislature to the repeal or considerable alteration of many clauses: The referees and district surveyors can have no object in being at issue with their neighbours, and much good may be done by courteous communication. As a key to the kind of information that would be useful to such a proposed committee, I will give the evidence I have upon a few out of the number of difficulties that appear to present themselves.

From the part I have taken in the subject some professional men have asked my opinion upon the construction of schedule D. part 2, as to laying bond timber into walls, their doubt being strengthened by the district surveyor declining to give an opinion, which I think he was quite justified in doing. The paragraph alluded to states, "and every plate, lintel, bond, corbel, being of wood, and every wood-brick laid into any external wall, and all ends of joists, of girders, and of the heads and sills of partitions running into any external wall, must be fixed at a distance from the external face of the wall of four inches at the least." This would appear to be clear and intelligible: the point of difficulty is raised by the concluding paragraph: "But no timber must be laid into any external wall in such manner or of such length as to render the part of the wall above it wholly or in great part dependent upon the wood for support, or so that any such wood might not be withdrawn without endangering the safety of the superincumbent structure, except in the case of brestsummers." I am surprised that any doubt should have arisen on this point, but it is a matter better set at rest as proposed. My reading would be, the first enactment is clear and positive—adopt it. Will any district surveyor be bold enough to demur to it? the *onus probandi* of danger would be with him, as contemplating the very unusual course of withdrawing bond-plates or joists. The Act permits the erection of nine-inch walls, and has suggested no new mode of construction to render unnecessary the laying ends of joists into such walls: the exception in favour of brestsummers would appear singular, as they generally have a considerable superincumbent weight. Let a district surveyor object in any case to so laying timber in a nine-inch wall—*ex uno disce omnes*—no timber can be laid in such a wall, which would be an absurdity.

A difficulty has arisen in the minds of several professional men having works in operation under written contract, in consequence of section 9 declaring that, "the difference of the costs and expenses of the works when performed according to the provisions of this Act, and the works as stipulated for in such contract" are subject matter of reference. I consider this one of the most equitable clauses in the Act, viewing it as I do. It can have no relation to any written contract in respect of the completion of works commenced before the 1st January, and thus taken altogether out of the operation of the Act; but I can imagine not an extreme hypothetical case, where its operation would be essentially equitable. A party has entered into a written contract to build six houses of similar character and cost; three were so far progressed before the 1st of January as to be irrespective of the Act: the other three, not commenced, would come within its operation, and for want of conformity would be induced a larger outlay. The difference in such a case to be assessed by the district surveyor, or if disputed, by the referees. Here would appear a broad principle of justice: the contractor who probably had taken the contract with prospect of small gain, ought not to be the sufferer by a change in the law of the land he could not contemplate.

I regret not being able to accord the same merit to sec. 10, relating to the modification of building leases, which I fear will lead to serious mischief and litigation; but being a question rather for those learned in the law, I will not attempt to discuss it, nor at present refer to other similar points of difficulty, but urge each party to make out his own catalogue of complaints as the first step to inquiry.

I would close these remarks by drawing attention to what would appear a serious difficulty in carrying out the intended operations of the Act as to schedule H. relating to "drains into sewers." This section is very imperative, but owing to the reservation of powers by sec. 51 to commissioners of sewers, will, I fear, in large districts be found perfectly inoperative. The question of sewage in densely-populated districts is now a subject of public interest, hitherto not sufficiently understood; it appears to be a matter more peculiarly addressed to our attention as in connection with house drainage, and it is with deep regret I feel myself bound to declare, that enormous sums in large districts have been so unscientifically expended, as to prevent the possibility of the sewers being rendered available for house drainage; thus throwing an insurmountable difficulty in the way of carrying a portion of the Act into effect, which contemplated the health and comfort of a neighbourhood. It is a subject at a future period I propose to intrude on your columns.

GREENWAY ROBINS.

NASMYTH'S PILE-DRIVER.—The first experimental trial of this invention was made at Manchester on the 19th ultimo. From want of space a 14-inch pile of 16 feet in length was employed; this the machine drove 15 feet into hard ground with twenty blows, at the rate of 65 blows per minute. Two of these machines will very shortly be in full action at the great steam dock about to be constructed by the Admiralty at Devonport.

CHARITY IN MARYLEBONE.—No less a sum than 1,500*l.* has been distributed among the poor during the past twelvemonth by the district societies of this parish.

THE OLD SOCIETY OF PAINTERS IN WATER COLOURS.

This collection, consisting chiefly of landscapes, is, on the whole, most unexceptionable. The artists in general have evidently struggled hard to surpass their competitors of "The New Society."

The lion is certainly Cattermole's "Benvenuto Cellini defending the Castle of St. Angelo," (300). For breadth, animation, and effect, this picture has hardly been surpassed in water-colour drawing. The figure of Benvenuti is extremely fine, well drawn, and magnificently coloured in the miniature style of scene painting, belonging only to this artist. Some plate on the left is very effectively painted. "The Visit to the Monastery" (330) by the same, is an exterior vying in beauty and excellence with No. 300.

"Instruction" (142), by J. W. Wright. A fine subject well treated. The two children are very beautiful, and the drapery broad and well cast, but the distance does not sufficiently retreat.

The next picture to it, by Copley Fielding, "View of Lancaster from the Coast," is a lovely drawing, remarkably sunny and rich in colour. "Danseneu on the Lahn, Morning" (75), by T. M. Richardson, jun., is a most beautiful picture, equal to Fielding. Other landscapes by this artist are remarkably fine and well studied.

"The Holy Well" (40), by Alfred Fripp; a clever and bold attempt, with much of the character and treatment of the same subject by Topham. The head of the girl to the left, and indeed the whole figure, is very nice, but the other girl with upraised face, although full of expression, strikes us as being deficient in drawing. His "Irish Mendicants" (152), displays mind and considerable feeling, more particularly in the old man, the hands of which are well drawn; the children are not so good. This artist's colour is prejudicial to his pictures by the strong predomination of cold, slaty greys.

"Romish Devotion" (10), by W. Hunt, is a most beautiful work; expressive pathos and unaffected simplicity are the leading excellencies of this perfect production; it is certainly Mr. Hunt's *chef d'œuvre*.

26. "Berne, Switzerland, Morning as it sometimes awakes among the Alps," by J. D. Harding. A fine landscape, broad and effective; the sky somewhat exaggerated.

"Café de la Place, Rouen" (30), by S. Prout. An elaborate and well-arranged drawing.

"A Cloudy Day" (112), by D. Cox, is a bold, fine sketch. Total disregard for any thing like prettyness and adherence to truth and nature are the strong characteristics of this artist. The same may be said of the "Corn Field" of Paul De Wint (221).

Frederick Taylor's "Counting the Game Bag," is a beautiful sketch, the effect of which, produced by a few vigorous touches, is wonderful. "The "Interior of a Cow-house" (18), "Ploughboy and Cart-horses" (23), and the "Gipsy Girl" (268), are three other excellent specimens of his happy and bold style.

57. "The Coast of Antrim," H. Gastineau. A bold attempt full of beauty, but wants depth and decision in parts.

"Scene in the South Downs" (92), by Copley Fielding, affords an excellent example of the clever management of mist rolling between the distant mountains.

Harding's "Beilstein on the Moselle" is a beautifully subdued bit of warm colour. 13. "Eagle's Nest, Glengariff." A clever landscape, the mountains in the distance well managed.

"View from Bolton Abbey" (188), by George Fripp, a masterly piece of colour and effect, but the golden warmth of the sun is deteriorated by the excessive coldness of the greens.

51. "A Cast-away," by Oakley, is clever, but rather forced and theatrical. 139. "A Gleaner," by the same, is much better, and is doubtless his best picture.

47. "Oratory, Naworth," by S. Rayner, is an exceedingly bold and clever drawing, very much in the style of Cattermole, shewing great power of execution. 91. "Lanercost Priory" is rather heavy, but very powerful.

C. Bentley has distinguished himself in (95) "An Indiaman lying-to," "Wreck on the Rocks of Elizabeth Castle, Jersey" (46), "Ballyshannon, Donegal" (117), and many other capital landscapes and marine pieces.

85. "House of the Francs Bateliers, and Church of St. Nicholas on the Canal of Ghent," W. Callow, is a capital picture, the best of this artist's many good works.

108. "Sunset, an effect from Nature," by F. O. Finch, is a very clever work in his style.

119. "Sir Roger de Coverley with the Gipsies," by George Harrison. A fine, rich landscape, the avenue of trees most effectively painted. 129. "Deserted," by the same, a good idea well treated.

178. "The Weary Travellers," by J. M. Wright. Clever, but monotonous and flat in colour.

206. By J. Stephanoff, is "an amalgamation of Museum Studies," and a most elaborate piece of work it is. Nos. 202 and 204, by the same, are very indifferent pictures.

210. "Hollyhocks," by V. Bartholomew. Nature itself, or rather a reflection in the looking-glass. 222. "Fruit," by the same, is perfect.

217. "Second Cabinet of Isabella d'Este," Lake Price. A most elaborate and beautiful drawing.

Another fine architectural drawing is (232) "Dumbarton Castle, on the Clyde," by S. Prout.

252. "Room in Gate-house, Kenilworth," by Joseph Nash, is one of his best.

The fruit pieces and flowers by Hunt are delicious; and two little pictures, 234, "Writing," and 266, "A Paper Lantern," are full of his usual natural truth, humour, and originality.

293. "Ill Omens," by Wright, is an exquisite morsel, though the flesh is rather too pink. "Love and Hope" is another beautiful bit in his peculiar style.

Mackenzie, the two Evans's, Turner, Scott, Palmer, Morison, and Glennie have some excellent productions.

There are a few pictures that deserve censure, but we do not desire to find fault: we leave off while we can without offending.

MUSEUM OF ARCHITECTURE AND THE DECORATIVE ARTS.

Sir,—I am very glad to see that you have urged the importance of a Museum of Architecture. The want of such an institution is much more felt by the artisan than by the architect's clerk; the latter has generally the opportunity of referring to his principal's library and collection of casts, whilst the former has seldom any thing else to refer to than the small collection of engravings, &c., which his slender means may enable him to gather together; and even these he is seldom able to classify, and is left entirely to his own judgment to select the good from the bad. The museum spoken of in your journal would be exceedingly useful and a very great boon, as far as it goes, to all engaged in architecture and decorative art, but would be still more so if it comprised specimens (either originals or casts) of the different styles of ornaments used for decorative furniture—such as the different periods of the French, the Italian, Renaissance, &c., and classified as proposed for the architectural antiquities. Such a collection and classification would be of immense service to the decorative workman; he would then have an opportunity of correcting his taste and judgment, and of executing his work in perfect keeping with the style required. I speak feelingly upon this subject, as I have long felt the want of such a collection; for although from practice I may have a tolerable idea of the different styles, still, from the want of correct data, one cannot always be certain of the detail. A knowledge of the varieties cannot be correctly obtained from books; indeed there is but one that I am aware of, that makes any attempt to define the styles (Page's "Acanthus,") some of the examples in which are rather wide of the mark.

I trust you will not allow the subject to drop, and that through your influence a petition to Parliament for the promotion of this object may be drawn up.—I am, Sir, &c.

April 23rd, 1845. J. B.

Royal Commission of Fine Arts.—A notice has been issued by command of the commissioners to the effect, that works of art intended for exhibition are to be sent to Westminster Hall on or before Saturday the 7th of June.

LIST OF NEW PATENTS RELATING TO ARCHITECTURE, ENGINEERING, &c., GRANTED FOR ENGLAND.

Furnished by Mr. A. Prince, of the Office for Patents of Inventions, Lincoln's-Inn Fields.

[six months for enrolment.]

William Henry Fox Talbot, Laycock Abbey, Wilts, for improvements in obtaining motive power, and in the application of motive power to railways. March 3.

Alexander Gordon, Westminster, for an improvement or improvements in producing motive power, by the action or agency of heat, and in the application of that power to purposes of locomotion or navigation. March 3.

Robert Frederick Browne, Knightsbridge, for certain improvements in the construction of chairs and couches. March 8.

George Selby, Birmingham, for certain improvements in the manufacture of pipes or tubes of that class or kind which are formed by welding skelps of wrought iron. March 8.

John Blyth and Alfred Blyth, of Saint Ann's, Middlesex, engineers and copartners, and George Parker Hubbuck, of Ponder's-end, Middlesex, engineer, for certain improvements in steam-engines, steam-boilers, and machinery for propelling vessels, which improvements in steam-engines and steam-boilers are for the most part applicable to the purposes of steam navigation, but are also applicable to other purposes for which steam-engines or steam-boilers are or may be used. March 13.

Thomas Dunn, of Manchester, engineer, for certain improvements in, or applicable to, turn tables, to be used on or in connection with railways. March 13.

John Ainslie, Redheugh, near Dalkeith, North Britain, farmer, for a certain improvement or certain improvements in the apparatus and arrangements for the manufacture of tiles and similar articles from clay, or other plastic matter. March 13.

Pryce Buckley Williames, of Llegodig, North Wales, gentleman, for certain improvements in the manufacture of artificial stone. March 17.

John Cleaveland Palmer, of East Hadham, Middlesex, U.S., gentleman, for certain machinery to be used in manufacturing certain kinds of tools for boring wood or various other substances. March 17.

Augustus Coffyn, of Paris, gentleman, for improvements in pumps. March 17.

Henry Samuel Rayner, of Alfreton, Derbyshire, gentleman, for certain improved means of preventing accidents to carriages on railways and common roads. March 18.

Richard Weller, of Capel, near Dorking, brick and tile manufacturer, for improvements in the manufacture of drain and other tiles and pipes. March 27.

Joseph Conrad Marie Baron de Liebhaber, of Paris, in the kingdom of France, for improvements in blasting rocks, and other mineral substances for mining and other purposes, and in apparatus to be used in such works. March 27.

Baths and Washhouses for the poor.—The committee have nearly concluded the purchase of a site for the first model establishment on the north side of Whitechapel, between the new street and Aldgate church. A working model of the selected design has been prepared and will be shortly submitted to the subscribers. It is said, that arrangements will be made to enable the very poor who cannot afford any payment to wash gratuitously during the summer. We learn from the newspapers, that an experiment has been made at the Eastern Asylum for the Houseless Poor which has satisfactorily proved that the very lowest of the poor will gladly avail themselves of facilities for personal cleanliness. On the evening of March 29, the apparatus, consisting of a boiler and tanks, with two hot baths (convertible into vapour baths), six wash tubs, and a drying closet, through which a draught of hot air is driven with great velocity, was first used. At first there was some reluctance on the part of the inmates to use the baths; but as soon as they had felt the refreshment of the warm water and clean clothes, they eagerly availed themselves of it. During the first five days eighty-six persons bathed and washed; during the last five (the apparatus having been used nineteen days altogether) the number was 391—the total being 987.

Correspondence.

DISTRICT SURVEYORS.

SIR,—I fully agree with your correspondent "Scrutator" as to the despotism desired to be exercised over builders by the district surveyors, or at least by those in the new districts. I have myself experienced great inconvenience from the manner in which the clerk to one of the new surveyors (who acts by deputy) performs his duties. If he sees a barrow of bricks or mortar in front of any house in his district, he makes it his particular business to catechise the labourers as to what they are doing. On one occasion he was told that they were cleaning and repairing some drains, and was not persuaded that such was really the case until he had leave to go in and see for himself. On another, he walked into a house where a bricklayer was engaged taking out a range, and seeing that the man was repairing part of the chimney jamb, which was found to be defective, he expressed much displeasure that no notice had been given to him before the work was commenced. The man replied that his master was not aware that it was necessary to give notice of such work; but the clerk said, his master had no right to think, *that* was *his* (the clerk's) place, and he wished to have notice in *every* case of works to be begun.

This gentleman also requests that a drawing may be submitted to him of any works proposed to be done in his district, which would certainly in some cases be desirable as well to the builder as to the surveyor, if the latter would say before the works were begun or estimates given, what part of the proposed works he perceived were contrary to the Act, and which he could not, therefore, allow to be executed; but all practical men will see the inconvenience and trouble occasioned by it in many cases where the job to be done is but trifling. For instance, I received an order to put up an outside spring-blind to a shop-front in the same surveyor's district, and, in course of conversation, asked him whether there was any objection to it? He said he could not allow it to be fixed at more than ten inches distance from the front wall of the house. I afterwards saw that he had allowed one to to be fixed on the cornice of another shop which projected some two or three feet, and on representing it to him, he replied: "That shews you the folly of my answering questions abstractedly, you must send me a notice and a drawing of what you propose to execute, and I will survey the place;" which, I suppose, also means that he will demand a fee for the same, and thus add considerably to the expense of a very trifling work.

Now, if all the district surveyors were to perform their duties in the same vexatious manner, the Act would become the oppression of all persons concerned in building operations; and I think that no time ought to be lost in calling a public meeting of the trade to consider the means of defending themselves from such arbitrary proceedings. I would wish, however, to bear testimony to the fair conduct of all the old district surveyors with whom I have come in contact since the commencement of the new Act, as they have all appeared willing to assist and advise the builder rather than to oppress him, and to endeavour to increase their fees at his expense. I am, Sir, &c.,

A SUBSCRIBER FROM THE FIRST.

POSITION OF ENCLOSURE WALLS IN KENT.

SIR,—Will you have the courtesy to answer the following question, and by so doing clear up what I conceive to be an erroneous view of the law of freehold property, and settle a most important object to all engaged in building?

I hold certain land in this county, and am about to build a boundary wall in place of a hedge and dike which at present divide my land from the adjoining (which is arable). Of course I wish to take in all the freehold, and to build to the extent of my bounds; but I am told that "dike room" must be left for the purpose of ploughing the adjoining land, so that three feet in width along the extent of the boundary of the freehold must be left unoccupied for the convenience of the ploughmen of the adjoining occupier, in order that he may plough the land to the extreme boundary. I wish, Sir, to be informed whether the common law maxim, "a solo usque ad cœlum,' is, or can be, contravened by what I think may be termed "ploughman's law."

By giving your opinion on the above, you will not only render an essential benefit to builders and building proprietors, but confer a favour on one who is at present

Kent, April 24, 1845. A NONSCRIBER.

*** We know nothing that would lead us to suppose our correspondent can be prevented from enclosing the whole of the land which belongs to him: we should not hesitate about doing so.—ED.

ST. THOMAS'S CHURCH, WINCHESTER.

SIR,—In reply to the inquiry which appeared in your last, I beg to say the lowest tender delivered for St. Thomas's Church, Winchester, was, as I have just heard, between 6,000*l.* and 7,000*l.* exclusive of the materials of the old church.

The advertisement for designs stated, that a church was required to cost 4,000*l.* If the amount I have named is correct, great injustice must have been done to the other competitors, as I cannot imagine that any but a very young and very green architect would, without additional means being placed at his disposal by the committee, have prepared a design which has so far exceeded the stipulated amount. I am, Sir, &c.,

AN ADHERER TO STIPULATIONS.

P. S.—Can you tell me why Mr. Elmslie's design was sent in, in the name of his clerk, Webbe?

TERRA COTTA.

SIR,—Having seen the letter on the subject of terra cotta in THE BUILDER of the 26th instant, I beg to state, that as Mr. Sharpe has no connection with my works, it is scarcely fair that he should be troubled with questions which the manufacturer (and he alone in many instances) can best answer. I shall therefore be glad to reply to any communication on the subject, addressed to me, Ladyshore, Bolton-le-Moor, where I established extensive works *in order to manufacture* the terra cotta for Leverbridge Church, and where I am now engaged, along with various other works, in preparing material for another church now building at Rusholme, near Manchester, also designed by Mr. Sharpe.

I take this opportunity of correcting an erroneous impression, which appears to be conveyed by the amounts published in the "Companion to the British Almanac" and the "Illustrated London News," by stating, that no "immediate superintendence" by the architect of any branch of the manufacture is now, nor has ever been, necessary to secure the correct execution of any work in terra cotta from plans drawn in the ordinary manner.

I am, Sir, &c.,

JOHN FLETCHER.

Ladyshore, Bolton, April 29, 1845.

*** We have received intimation that G. and C. Bishop, of 3, Benet's-hill, Doctors' Commons, have specimens of the Ladyshore terra cotta, and will give any information that may be required.—ED.

TESTIMONIAL TO MR. JOHN BRITTON, F.S.A.—At the preliminary meeting of the friends of Mr. Britton, held on Thursday, the 24th ult., to consider the best means of testifying their appreciation of his valuable labours, a committee of fifty gentlemen was formed, with power to add to their numbers; and it was resolved to adjourn till the 10th inst., and to invite the co-operation of all persons who are friendly to the object. The committee comprise Messrs. W. J. Booth, E. W. Brayley, F.S.A., H. Broadley, M.P., F.R.S., W. Brockedon, F.R.S., A. Burgess, F.S.A., W. H. Ludlow Bruges, M.P., L. Cubitt, W. Cubitt, T. Cubitt, J. G. Children, F.R.S., G. Corner, F.S.A., Peter Cunningham, T. L. Donaldson, C. Fowler, W. J. Donthorne, T. Grissell, G. Godwin, F.R.S., Nathaniel Gould, John S. Gaskoin, J. E. Gray, F.R.S., J. D. Harding, W. Hosking, F.S.A., W. Herbert, Dr. Ingram, Dr. Knapp, T. Longman, The Rev. J. Mitford, J. B. Nichols, F.S.A., H. W. Pickersgill, R.A., L. Pocock, F.S.A. Dr. Rees, F.S.A., Lieut. Stratford, F.A.S., The Rev. E. Tagart, W. Tooke, F.R.S., The Rev. T. S. Turnbull, M.A., W. Wansey, F.S.A., T. Unwins, R.A., W. Tite, F.R.S., The Right Hon. Thomas Wyse, M.P., &c.

Miscellanea.

METROPOLIS IMPROVEMENTS.—The Commissioners of her Majesty's Woods and Forests have, during the last few days, issued their plans for the erection of the houses in Endell-street, between Broad-street, St. Giles, and Long-acre, the gas and water-pipes having been laid down and the sewers constructed. The fronts of the several houses are to be "architectural elevations" of a uniform appearance, and "no objection will be made to buildings of the style known as Elizabethan." The ground excavated, if required by the commissioners, is to be deposited to fill up the low ground around the Millbank Prison. All the pieces of ground to be let on lease, for a term of eighty years from Midsummer day 1845, at a rent of one peppercorn for the first year, and at such rent or rents for the remainder of the term as shall be agreed upon; and the lessee is to forfeit all right to the lease unless the carcass of each house be completed by or before Christmas-day, and the houses and all other buildings be rendered fit for habitation by or before Midsummer-day, 1846. The lessee is to reimburse the commissioners for the expenses incurred on account of building the vaults and sewers, and for paving the street, at the ratio of 700*l.* for a frontage of 114 feet 6 inches, or in lieu thereof 35*l.* rent per annum. The width of the street is to be between 50 and 60 feet.—*Times.*

COST OF GAS.—From various experiments recently made by Mr. Lumsden, of Monkwearmouth, he found that one ton of coal, which cost 16s. produces thirty bushels of coke, twenty gallons of tar, and 9,000 cubic feet of gas. If this is correct, and if we apply the result of these experiments, it will be found that the quality of coke and tar produced from a ton of coal amounts exactly in value to the price of the coal used, and that the 9,000 cubic feet of gas, sold to consumers at its present price, yields to its fortunate makers, the gas companies, a profit of not less than 3*l.* 7s. 6d.

GLASS PIPES.—Mr. James Hartley, of Bishopwearmouth Glass Works, has, after extensive experiments, succeeded in establishing the practicability of making glass pipes, suitable for the conveyance of gas or water, and has it is also said, proved that pipes, stronger than the ordinary metal ones, and much cheaper, may be made of glass.—*Mining Journal.*

THE CITY MUSEUM.—At a recent meeting of the Common Council, Mr. Ashurst brought up the report of the City Lands Committee, to whom had been referred the subject of the appropriation of part of the crypt at Guildhall for a museum. The report, which was ordered to be printed, stated that the clerk of the city works had certified that an outlay of 2,000*l.* would be necessary to effect the purpose contemplated.

SITE FOR BATHS.—At the same meeting Mr. Alderman Johnson presented a petition from the Committee for Establishing Baths and Wash-houses for the Labouring Classes, praying for a lease of part of Farringdon Market, next Shoe-lane, for the term of sixty years, at the yearly rent of 100*l.*, at 2,500*l.* premium. On the motion that the petition be referred to the Market Committee, a lengthy conversation arose, in which the majority of the speakers, though friendly to the establishment of baths, and to the general objects of the petitioners, were opposed to the appropriation of the site solicited for the establishment, on the ground that it would interfere with the improvements in the locality, with a view to improve the traffic in Ludgate-hill and on Holborn-hill. The motion was in the end negatived by a large majority.

ARTIFICIAL STONE.—Mr. Frederic Ransome, of Ipswich, has obtained a patent for the formation of artificial stone. This *desideratum* is accomplished by chemical process, of a novel description. The materials used are flint, or granite, or marble; and these when pulverized and worked up, form a thick silicious paste. This paste so produced, is placed in moulds of any given design, and upon being subjected to the action of an oven, the contents of the moulds become vitrified; thus the most compact and beautiful designs in slate, or granite, or marble, are produced, applicable alike for ornament as for more substantial purposes; the material is said to be fully capable of withstanding all atmospheric changes, and is durable as flint

New Churches.—At the monthly meeting of the society for promoting the enlargement, building and repairing of churches and chapels, held last week, grants were voted for the erection of new churches in the districts of Rainow, in the parish of Prestbury; Homerton, in the parish of Hackney; Ramsbottom, in the parish of Bury; Chapeltown, near Sheffield; Melplaish, near Bridport; Bishop's Sutton, near Bristol; and Bensham, in the parish of Gateshead. Towards rebuilding the parish churches of Wolsingham, near Durham; Woolsthorpe, near Grantham; Fairlight, near Hastings; Great Musgrave, near Brough; and Kingsweare, near Dartmouth. Also towards increasing the accommodation by various means in the churches at Broughton, near Manchester; Gorlestone, near Yarmouth; Nailshead, near Bristol; Brompton Rolp, near Wiveliscomb; and East Knoyle, near Hindon.

British Archæological Association.—The rival bodies are coming into closer collision. In consequence, as we learn, of the pressing invitations received from Winchester by the committee appointed at the general meeting held in London, they have determined to adhere to the original plan and hold their congress there in August. Lord Albert Conyngham has consented to preside. The meeting advertised by the other party is proposed to take place in September. Now is the time for all those who desire that the society should not be wrecked, and are not mere partisans, to come forward and declare they will not attend either meeting, unless a coalition be brought about. A statement to that effect, signed by a hundred members of the association would surely induce both committees to pause before they risked failure.

St. Matthew's Church, Gosport.—The foundation-stone of this church was laid in the presence of a large assemblage of persons of all ranks, by the venerable Archdeacon Wilberforce, assisted by the neighbouring clergy, on Thursday, the 10th ult. The site was presented by her Majesty's Honourable Board of Ordnance, together with land for extensive national schools. The style of architecture is the early English; Mr. Benjamin Ferrey is the architect, and Mr. D. Nicholson of Wandsworth, the builder.

Restoration of Stepney Church.—An effort is now making to restore and enlarge the old parish church of St. Dunstan, Stepney, which has long been suffered to lie in a state of neglect and dilapidation. To carry out the proposed objects as they ought to be, the sum of 4,000*l.* will be required, and as it is not possible to raise the whole amount among the inhabitants, the public at large have been appealed to for assistance.

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For the works required in the extensive enlargement of the Liverpool Workhouse for the several branches as follows:—Excavating and Brickwork, Masonry, including flagging, Joiners and Carpenters, work, including Ironmongery, Plumbing and Glazing, Smith's Work, Slating and Plastering, and Painting.

For taking down part of the present County Gaol of Lincoln, and erecting a New Building on the site thereof, with airing yards and other requisites.

For building Sewers in Helmet-court, Wormwood-street; Sweet Apple-court, Bishopsgate-street; Fire Bell Court, Houndsditch; and Garden-court, Petticoat-lane; for the Commissioners of Sewers of the City of London.

For the reparation of ten houses in Houndsditch. The whole to be finished by the end of August.

For the maintenance of the Birmingham railway between the Euston and Rugby stations.

For the erection of an office for the Manchester and Leeds Railway Company.

For building a school-room in London near the bridges.

For the supplying of such quantities of Broken Guernsey Granite as may be required by the Board for Repairing the Highways in the parish of Clerkenwell.

For the supply and delivery in Bristol of about 300 tons of cast-iron Water-pipes, of various dimensions, from 7 inches downwards, with certain elbows, nozzles, &c.

For the Masonry Work of several Viaducts and Bridges.

For the formation and completion of a new Drain, being about eleven miles long, twenty yards wide, and five yards deep, for the Middle Level Drainage Commissioners. Also for the erection of a Staunch, several Bridges of wood with brick abutments, together with the necessary culverts, and other works.

For the performance of the Works connected with the erecting of the new Pier at Penzance.

For the erection of the Borough Gaol, Birmingham.

For the supply of 1,200 lineal yards of 11-16ths best attested, close, short-linked Chain.

For the erection of a Building in London for a highly-patronized purpose, at the estimated cost of about 30,000*l.*

COMPETITIONS.

Plans for a Church to be erected within the Borough of Kingston-upon-Hull.

Plans, sections, and elevations for a Terminus, and other requisite accompanying offices, for the Great Southern and Western Railway, Ireland.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

The timber and other trees now standing upon the estate at Woodseaves, Salop. By order of the Lord Chancellor made in the cause "Dickin *v.* Barker."

At Mitchell's Farm, near Saffron Walden. A fall of 68 famous Oak, and six Ash timber trees with the top wood.

250,000 Building Bricks, 40,000 Arch ditto, &c.; now at Sherborne Kiln, three miles from London.

At Patcham, near Brighton: a large quantity of Railway Materials; the whole of the Iron is of Staffordshire manufacture.

BY TENDER.

A Virgin Forest of Valuable Timber in Walachia. The principal part of the Trees is Oak. The said Forest may produce about 500,000 cubic feet of Timber.

TO CORRESPONDENTS.

"J. P.," on the Art and Construction of Brickwork, next week. We shall hope to find more information *in succeeding articles.*

"W. Conch."—We have received the specimens of "stone embalment," and shall be glad to learn something of the process and cost.

"Consumption of Smoke."—A correspondent wishes to learn the most simple and efficacious mode of consuming the smoke from the furnaces of a boiler or large copper, and will be glad to receive particulars from patentees.

"Building Materials."—A correspondent suggests that returns of the market price of building materials in various districts of the country would be valuable. We shall be glad to receive such from provincial correspondents.

"H. B." must give notice to the district surveyor before he constructs the furnace. The earthen chimney tube, as pointed out, would not be permitted. There does not seem to be any reason why the furnace should not be built in the position of present stove. The 8th clause of schedule F. must be looked to.

"V. A." — There is unfortunately no royal road to a knowledge of arches and vaults; it must be gained from many sources. Our correspondent will find Ware's "Tracts on Vaults, &c.," and Gwilt's "Treatise on the Equilibrium of Arches," valuable assistants. The last part of the transactions of the Institute of Architects contains an important paper on the subject by Professor Willis.

"J. E. G." shall appear; we are obliged to our correspondent.

"W. M." is thanked for the suggestion; we will look to the paper in question.

"Semper Idem" next week.

"T. A.;" the reply seems unnecessary.

"M."—Plans are to be sent in on or before the 8th inst. Further information can be obtained from the Rev. R. Kemp Baily, B.A., Hull.

Received:—*"Dolman's Magazine," No. 3; "The Literary Journal of the London Mechanics' Institution," No. 2; "The Medical Times for April.*

MEETINGS OF SCIENTIFIC BODIES

During the ensuing week.

Monday, May 5. — *Entomological*, 17, Old Bond-street, 8 P.M.; *British Architects*, 16, Grosvenor-street (anniversary), 8 P.M.; *United Service Institution*, Whitehall-yard, 9 P.M.; *Chemical* (Society of Arts), Adelphi, 8 P.M.; *Medical*, Bolt-court, Fleet-street, 8 P.M.

Tuesday, 6.—*Linnæan*, Soho-square, 8 P.M.; *Horticultural*, 21, Regent-street, 3 P.M.; *Civil Engineers*, 25, Great George-street, 8 P.M.

Wednesday, 7.— *Society of Arts*, Adelphi, 8 P.M.

Thursday, 8. — *Royal*, Somerset-house, 8½ P.M.; *Antiquaries*, Somerset-house, 8 P.M.; *Royal Society of Literature*, 4, St. Martin's-place, 4 P.M.; *Medico-Botanical*, 32, Sackville-street, 8 P.M.

Friday, 9. — *Astronomical*, Somerset-house, 8 P.M.; *Royal Institution*, Albemarle-street, 8½ P.M.; *Philological*, 49, Pall Mall, 8 P.M.

Saturday, 10.—*Royal Botanic*, Regent's-park, 4 P.M.

ADVERTISEMENTS.

LIFE ASSURANCE.

THE BRITISH MUTUAL LIFE ASSURANCE SOCIETY entertains proposals of any description from 20*l.* upwards, involving the contingency of human life, and offers the following advantages to its members.

A BONUS ANNUALLY (in shape of low Premiums), equal to those of other offices, granted every three, five, or seven years, and

THE PROSPECT OF A LARGER BONUS than can possibly be obtained at those offices, in the peculiarly beneficial mode adopted in the distribution of the surplus.

Prospectuses and every information may be had on application at the office, 17, New Bridge-street, Blackfriars.

SPECIMEN OF TABLES.

Age.	Annual Premium for £100.	Age.	Annual Premium for £100.	Age.	Annual Premium for £100.
20	£1. 13s. 8d.	40	£2. 14s. 9d.	60	£6. 6s. 7d.

CHARLES JAMES THICKE, Resident Secretary.
17, New Bridge-street, Blackfriars.

NOTICE TO INVENTORS.—OFFICE for PATENTS of INVENTIONS and REGISTRATION of DESIGNS, 20, Half-moon-street, Piccadilly. Patents obtained for the United Kingdom and Foreign Countries; Designs registered; printed instructions, containing the charges, forwarded gratis; and every information given by application, if by letter pre-paid, to Mr. M. Josselin Cooke, 20, Half-moon-street, Piccadilly.

OKER.—B. R. WRIGHT begs to inform Builders, Paperstainers, and the Trade in general, the prices for Native Oxford and Washed STONE OKERS, at his Oil and Colour-warehouse, 27, Castle-street East, Oxford-street:—Native Oxford Oker, 21s. per cwt, or 18*l.* per ton; Washed Stone Oker, 14s. per cwt., or 12*l.* per ton; Plasterers' Oker, 7s. per cwt. A liberal discount to the trade.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass at 1s. 3d. per foot superficial, and having just built two of the largest Kilns in London, is enabled to execute extensive Orders with unprecedented dispatch, 1, King-street, Portman-square.—Terms, Cash only.

DUTY off WINDOW GLASS. — On April the 6th, Squares stouter and of better make than formerly for Glazing purposes at 6d. per foot.

NURSERYMEN, MARKET GARDENERS, AND OTHERS requiring Small Glass, will find a greater variety of sizes (a large Stock of which is constantly on hand) than is kept by any other house in London, from 4d. per foot. Flattened Sheet, Stained, Fluted, the BIRMINGHAM Sheet Plate (superior in all respects to every other make), and Ornamental Glass of every description. Complete Lists of Glass, Lead, Colours, &c., at ready-money prices, may be had (gratis) on application to R. Cogan, at the Western Glass, Lead, and Colour Warehouse, 5, Princes-street, Leicester-square, London.

SURVEYORS, CONTRACTORS FOR PUBLIC WORKS, and the TRADE generally, sending specifications of quantities required, will receive by return of post an invoice at the very lowest cash prices.

A parcel of very Superior Spruce Oker, suitable for PLASTERERS AND PAINTERS, to be sold at 6s. per cwt.

HIP TILES to suit slate roofs in colour; Ridges, with plain or rebated joints, roll tops, and vertical ornaments; drains, many sizes, with plain or socket joints; paving in squares, hexagons, octagons, &c., different colours; roofing, in Grecian or Italian styles, other devices also, or plain; conduits, which do not injure pure water; fire-bricks and tiles; clinkers, and out-door paving; sundry wall-coping, garden-borders, chimney-tops; also tubular and other flues of peculiar material. No agent, but a depôt at WHITEFRIARS, and 23, WATER-LANE, FLEET-STREET, LONDON, under Mr. PEAKE'S personal care, to supply genuine TERRO-METALLIC goods at fair prices as per quality.

The TILERIES, TUNSTALL, STAFFORDSHIRE, are near the centre of England, whence boats are sent direct to any inland place; or to the Mersey for the coasts, the colonies and elsewhere.

OFFICE FOR PATENTS REMOVED FROM No. 16 TO 117 CHANCERY-LANE.

PRACTICAL ASSISTANCE GIVEN to parties taking Letters Patent, by Mr. J. WILSON, Engineer and Patent Agent. Every description of business relating to or connected with Patents, Registration of Designs, Patent Agency, &c., conducted at his offices, 117, CHANCERY-LANE, opposite Carey-street. Negotiations entered into with parties wishing to dispose of or purchase patented or registered inventions. Every necessary information may be obtained at the offices as above, where also may be had printed instructions (gratis), to which Mr. W. begs particularly to draw the attention of parties about to take out patents

Mechanical drawings of every description, original designs for machinery, models, &c., executed with dispatch and economy.

POLONCEAU'S BITUMEN PAVEMENT for paving Foot walks, Terraces, Garden walks, Stables, Coach Houses, Granaries, Corn Stores, and Salt Warehouses. For the exclusion of Damp and Vermin in Basements it is particularly adapted, and for Roofing Dwelling Houses, Porticos, Balconies, and Sheds.

Price 3s. 6d. per square yard.

BITUMEN for covering the Arches of Bridges, Culverts, &c. &c. on Railways and other places (with instructions for laying it down), may be had at the rate of 45s. per ton, by applying to JOHN PILKINGTON, 15, Wharf-road, City-road.

BASTENNE ASPHALTE and BITUMEN COMPANY, Offices, 31, Poultry. The Directors of this Company beg leave to call the attention of ARCHITECTS, BUILDERS, and others, to the very beneficial results attendant on the use of BITUMEN in the erection of buildings, &c. Its application as a FLOORING will be found eminently useful. It is also valuable for numerous other purposes, more particularly where the object sought for is the EXCLUSION OF DAMP AND VERMIN. The Directors beg to refer to the works in Trafalgar-square, which have given general satisfaction. Scale of prices per foot square:—1 inch thick, 8d.; ¾ inch thick, 7d.; ½ inch thick, 6d. Works not measuring 400 feet, 1d. per foot extra. Roofing executed at 6d. and 7d. per foot square. Concrete is charged in addition according to the thickness when required. Carriage and men's time are charged extra when works are executed beyond three miles from the General Post-office. Bitumen £6 per ton, without grit. Bitumen £5 per ton, with grit.

CHARLES F. TILSTONE, Sec.

TO ARCHITECTS.

IN consequence of many complaints having been made to the Company, by Architects, of a spurious material having been used in the execution of Works where the SEYSSEL ASPHALTE had been specified for, the Directors, with a view to ensure the fulfilment of any such specification, have authorized CERTIFICATES to be granted to Builders where the

SEYSSEL ASPHALTE

has been used. For the purpose of securing the use of the Genuine Article, Architects and others are recommended to insert in their specifications the "Seyssel Alphalte, Claridge's Patent," and not merely "Asphalte," or "Bitumen," as in many cases where these terms have been used, gas-tar and other worthless and offensive compositions have been introduced.

I. FARRELL, Secretary,
Stangate, near Westminster Bridge, Jan., 1845. Seyssel Asphalte Company.

Books of Instructions for Use may be had at the Office of "The Builder," and of all Booksellers in Town and Country, price 1s.

*** In proof of the necessity of the above advertisement, it may be mentioned, that it has come to the knowledge of the Directors, that in certain works which have been executed by Messrs. Curtis, builders, of Stratford, a spurious material has been used by them, contrary to the specifications, which expressly mentioned, that "Claridge's Asphalte" was to be used.

ATKINSONS CEMENT.—The public is respectfully informed, that the price of this very excellent Cement, which has now been in use for Architecture and Engineering works upwards of thirty years, is reduced to 2s. 3d. per bushel, and may be had in any quantity at Wyatt, Parker, and Co.'s Wharf, Holland-street, Surrey side of Blackfriars-bridge.

N.B.—This Cement being of a light colour, requires no artificial colouring or painting, and may be used for stucco with three parts its own quantity of sand.

MARTIN'S PATENT CEMENT.
TO ARCHITECTS, BUILDERS, AND PAINTERS IN FRESCO.

STEVENS and SON, PATENTEES and SOLE MANUFACTURERS, beg respectfully to announce that this beautiful cement has now arrived at a degree of excellence far surpassing their most sanguine expectations. For all internal work it possesses a great superiority over every article hitherto in use; it is now being used extensively by Government in the British Museum and other public buildings. IT DOES NOT THROW OUT ANY SALT, but presents a beautifully plain and perfect surface, which may be painted upon dry work within four days without peeling. It is equally applicable for walls or lath, for mouldings, architraves, skirting, or flooring; and is admitted to form the best ground for fresco painting, having been used for many of the prize frescos lately exhibiting in Westminster Hall. It will bear an intense heat without cracking, and for hardness, durability, and economy, cannot be equalled.

186, DRURY-LANE, LONDON.

Agent for Liverpool and Manchester, Mr. R Part, 11, Atherton's-buildings, Dale-street, Liverpool.

STOCKTON LIAS CEMENT,

MANUFACTURED upon principles laid down in Major General Pasley's Essay on Limes and Cements.—It is of a beautiful Stone Colour, and of acknowledged superior quality, free from vegetation, does not crack, and is well adapted for every description of modelling and casting. It has been extensively used at the Earl of Macclesfield's, Ensham-hall, by C. Barry, Esq.; at Sir F. Shuckburgh's, Shuckburgh-hall, by H. E. Kendall, Esq.; for Works now in progress at Marbury-hall, Cheshire; and for many of the Mansions erected during last Summer in the vicinity of London.

WILMCOTE LIAS CEMENT,

Is of inferior colour to the above, from containing oxide of iron, but of very Superior Quality for Tunnels, Sewers, and Hydraulic Purposes; its use is stipulated for by Mr. John Roe, Engineer of Sewers, London.

GROUND LIAS LIME,

For Concrete, and every description of Hydraulic Work, for which purposes it has been used at Woolwich and Chatham Dock Yards, the London Docks, New Exchange, Hungerford Suspension Bridge, Westminster Bridge, Grand Junction Water Works, Holborn Sewers, Regent and Grand Junction Canals, Wood Paving Companies, London and Birmingham Railway Company, for Works in the Alster at Hamburgh, the Kiel and Altona Railway, and various Sea Walls, &c.

At R. Greaves's Works, Stockton, near Southam, Warwickshire, and at No. 2, South Wharf, Paddington, London.

KEENE'S PATENT MARBLE CEMENT.—The Patentees of this composition beg to refer to the British Museum, the Royal Exchange, the new works at Bethlem Hospital, Greenwich Hospital, and the Coliseum in the Regent's-park, as buildings finished or in progress, in which Keene's Cement has been used as an internal stucco. Its superiority to common plastering consists in its extreme hardness, and the rapidity with which it dries, which qualities fit it to receive paint or other finishing sooner than other water Cement.

When employed for skirtings, architrave, and other mouldings, in place of wood, it checks dry-rot, is impervious to vermine, prevents the spread of fire, and is more economical in its application than the material for which it thus becomes the substitute.

Confirmation of these statements is to be found in the almost universal adoption of Keene's Cement for Skirting and Hall flooring in the new houses on the Hyde Park Estate, where its application is to be seen to the fullest advantage.

In Liverpool and Manchester, Keene's Cement has in several cases been used for the covering of the fire-proof warehouse floors, where its lightness and hardness give it the preference over tiles and flagging, which are much heavier, and necessarily leave the floor intersected with numerous joints, whilst Keene's Cement is laid down in one unbroken surface.

The high polish and marble-like hardness of which this Cement is susceptible render it the most suitable material for the manufacture of Scagliola.

Patentees, J. B. WHITE & SONS, Millbank-street, Westminster, Manufacturers of Roman and Portland Cement.

Depôt in Liverpool, 26, Seel-street, James Woods, Agent.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known, to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application to MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

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